AK

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/063709 A2

(51) International Patent Classification[7]: G01N

(21) International Application Number: PCT/US2004/000368

(22) International Filing Date: 8 January 2004 (08.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/438,735 8 January 2003 (08.01.2003) US

(71) Applicant (*for all designated States except US*): **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; Route 206 and Province Line Road, Princeton, New Jersey 08543-4000 (US).

(72) Inventors; and
(75) Inventors/Applicants (*for US only*): **AMLER, Lukas, C.** [US/US]; 845 Granada Lane, Foster City, California 94404 (US). **JANUARIO, Thomas** [US/US]; 11 South Main Street, Lambertville, New Jersey 08530 (US).

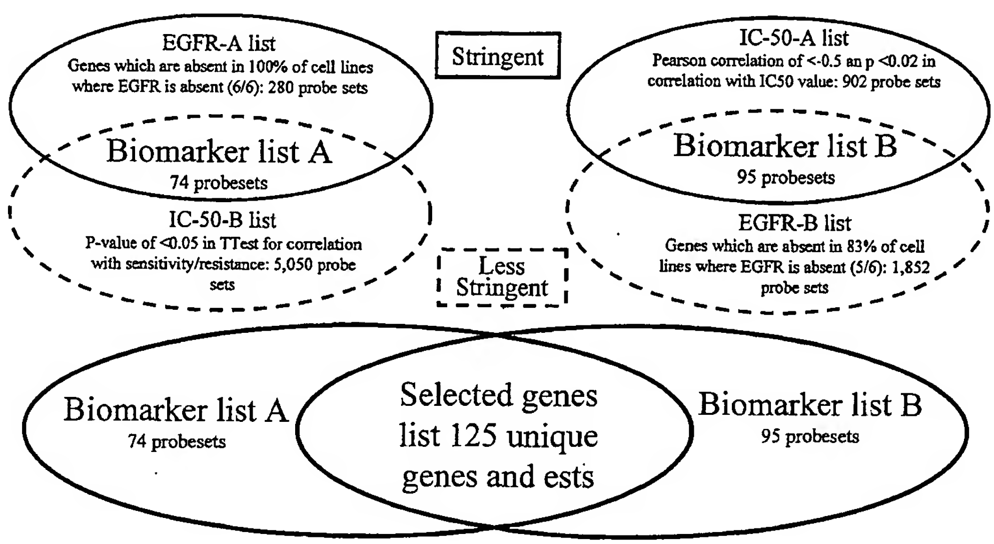
(74) Agents: **GOLIAN, Paul, D.** et al.; Bristol-Myers Squibb Company, P.O. Box 4000, Princeton, New Jersey 08543-4000 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: BIOMARKERS AND METHODS FOR DETERMINING SENSITIVITY TO EPIDERMAL GROWTH FACTOR RECEPTOR MODULATORS



(57) Abstract: EGFR biomakers useful in a method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises (a) exposing the mammal to the EGFR modulator and (b) measuring in the mammal level of at least one biomaker, wherein a difference in the level in at least one biomaker measured in (b) compared to the level of the biomaker in a mammal that has not been exposed to the EGFR modulator indicates that the mammal will respond therapeutically to the method of treating cancer.

WO 2004/063709 A2

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BIOMARKERS AND METHODS FOR DETERMINING SENSITIVITY TO EPIDERMAL GROWTH FACTOR RECEPTOR MODULATORS

FIELD OF THE INVENTION

The present invention relates generally to the field of pharmacogenomics, and more specifically to methods and procedures to determine sensitivity in patients to allow the development of individualized genetic profiles which aid in treating diseases and disorders based on patient response at a molecular level.

BACKGROUND OF THE INVENTION:

Cancer is a disease with extensive histoclinical heterogeneity. Although conventional histological and clinical features have been correlated to prognosis, the same apparent prognostic type of tumors varies widely in its responsiveness to therapy and consequent survival of the patient.

New prognostic and predictive markers, which would facilitate an individualization of therapy for each patient, are needed to accurately predict patient response to treatments, such as small molecule or biological molecule drugs, in the clinic. The problem may be solved by the identification of new parameters that could better predict the patient's sensitivity to treatment. The classification of patient samples is a crucial aspect of cancer diagnosis and treatment. The association of a patient's response to a treatment with molecular and genetic markers can open up new opportunities for treatment development in non-responding patients, or distinguish a treatment's indication among other treatment choices because of higher confidence in the efficacy. Further, the pre-selection of patients who are likely to respond well to a medicine, drug, or combination therapy may reduce the number of patients needed in a clinical study or accelerate the time needed to complete a clinical development program (M. Cockett et al., 2000, *Current Opinion in Biotechnology*, 11:602-609).

The ability to predict drug sensitivity in patients is particularly challenging because drug responses reflect not only properties intrinsic to the target cells, but also a host's metabolic properties. Efforts to use genetic information to predict drug sensitivity have primarily focused on individual genes that have broad effects, such as the multidrug resistance genes, *mdr1* and *mrp1* (P. Sonneveld, 2000, *J. Intern. Med.*, 247:521-534).

The development of microarray technologies for large scale characterization of gene mRNA expression pattern has made it possible to systematically search for molecular markers and to categorize cancers into distinct subgroups not evident by traditional histopathological methods (J. Khan et al., 1998, *Cancer Res.*, 58:5009-5013; A.A. Alizadeh et al., 2000, *Nature*, 403:503-511; M. Bittner et al., 2000, *Nature*, 406:536-540; J. Khan et al., 2001, *Nature Medicine*, 7(6):673-679; and T.R. Golub et al., 1999, *Science*, 286:531-537; U. Alon et al., 1999, *Proc. Natl. Acad. Sci. USA*, 96:6745-6750). Such technologies and molecular tools have made it possible to monitor the expression level of a large number of transcripts within a cell population at any given time (see, e.g., Schena et al., 1995, *Science*, 270:467-470; Lockhart et al., 1996, *Nature Biotechnology*, 14:1675-1680; Blanchard et al., 1996, *Nature Biotechnology*, 14:1649; U.S. Patent No. 5,569,588 to Ashby et al.).

Recent studies demonstrate that gene expression information generated by microarray analysis of human tumors can predict clinical outcome (L.J. van't Veer et al., 2002, *Nature*, 415:530-536; M. West et al., 2001, *Proc. Natl. Acad. Sci. USA*, 98:11462-11467; T. Sorlie et al., 2001, *Proc. Natl. Acad. Sci. USA*, 98:10869-10874; M. Shipp et al., 2002, *Nature Medicine*, 8(1):68-74). These findings bring hope that cancer treatment will be vastly improved by better predicting the response of individual tumors to therapy.

Needed are new and alternative methods and procedures to determine drug sensitivity in patients to allow the development of individualized genetic profiles which are necessary to treat diseases and disorders based on patient response at a molecular level.

SUMMARY OF THE INVENTION:

The invention provides methods and procedures for determining patient sensitivity to one or more Epidermal Growth Factor Receptor (EGFR) modulators. The invention also provides methods of determining or predicting whether an individual requiring therapy for a disease state such as cancer will or will not respond to treatment, prior to administration of the treatment, wherein the treatment comprises one or more EGFR modulators. The one or more EGFR modulators are compounds that can be selected from, for example, one or more EGFR specific ligands, one or

more small molecule EGFR inhibitors, or one or more EGFR binding monoclonal antibodies.

In one aspect, the invention provides a method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises: (a) measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4; (b) exposing the mammal to the EGFR modulator; (c) following the exposing of step (b), measuring in the mammal the level of the at least one biomarker, wherein a difference in the level of the at least one biomarker measured in step (c) compared to the level of the at least one biomarker measured in step (a) indicates that the mammal will respond therapeutically to said method of treating cancer.

As used herein, respond therapeutically refers to the alleviation or abrogation of the cancer. This means that the life expectancy of an individual affected with the cancer will be increased or that one or more of the symptoms of the cancer will be reduced or ameliorated. The term encompasses a reduction in cancerous cell growth or tumor volume. Whether a mammal responds therapeutically can be measured by many methods well known in the art, such as PET imaging.

The at least one biomarker can also be selected from the biomarkers of Table 5. The mammal can be, for example, a human, rat, mouse, dog rabbit, pig sheep, cow, horse, cat, primate, or monkey.

The method of the invention can be, for example, an in vitro method and wherein the at least one biomarker is measured in at least one mammalian biological sample from the mammal. The biological sample can comprise, for example, at least one of whole fresh blood, peripheral blood mononuclear cells, frozen whole blood, fresh plasma, frozen plasma, urine, saliva, skin, hair follicle, or tumor tissue.

In another aspect, the invention provides a method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises: (a) exposing the mammal to the EGFR modulator; (b) following the exposing of step (a), measuring in the mammal the level of the at least one biomarker selected from the biomarkers of Table 4, wherein a difference in the level of the at least one biomarker measured in step (b), compared to the level of the biomarker in a mammal that has not been

exposed to said EGFR modulator, indicates that the mammal will respond therapeutically to said method of treating cancer.

In yet another aspect, the invention provides a method for testing or predicting whether a mammal will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises: (a) measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4; (b) exposing the mammal to the EGFR modulator; (c) following the exposing of step (b), measuring in the mammal the level of the at least one biomarker, wherein a difference in the level of the at least one biomarker measured in step (c) compared to the level of the at least one biomarker measured in step (a) indicates that the mammal will respond therapeutically to said method of treating cancer.

In another aspect, the invention provides a method for determining whether a compound inhibits EGFR activity in a mammal, comprising: (a) exposing the mammal to the compound; and (b) following the exposing of step (a), measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4, wherein a difference in the level of said biomarker measured in step (b), compared to the level of the biomarker in a mammal that has not been exposed to said compound, indicates that the compound inhibits EGFR activity in the mammal.

In yet another aspect, the invention provides a method for determining whether a mammal has been exposed to a compound that inhibits EGFR activity, comprising (a) exposing the mammal to the compound; and (b) following the exposing of step (a), measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4, wherein a difference in the level of said biomarker measured in step (b), compared to the level of the biomarker in a mammal that has not been exposed to said compound, indicates that the mammal has been exposed to a compound that inhibits EGFR activity.

In another aspect, the invention provides a method for determining whether a mammal is responding to a compound that inhibits EGFR activity, comprising (a) exposing the mammal to the compound; and (b) following the exposing of step (a), measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4, wherein a difference in the level of said biomarker measured

in step (b), compared to the level of the biomarker in a mammal that has not been exposed to said compound, indicates that the mammal is responding to the compound that inhibits EGFR activity.

As used herein, "responding" encompasses responding by way of a biological and cellular response, as well as a clinical response (such as improved symptoms, a therapeutic effect, or an adverse event), in a mammal

The invention also provides an isolated biomarker selected from the biomarkers of Table 4. The biomarkers of the invention comprise sequences selected from the nucleotide and amino acid sequences provided in Table 4 and the Sequence Listing, as well as fragments and variants thereof.

The invention also provides a biomarker set comprising two or more biomarkers selected from the biomarkers of Table 4.

The invention also provides kits for determining or predicting whether a patient would be susceptible or resistant to a treatment that comprises one or more EGFR modulators. The patient may have a cancer or tumor such as, for example, a colon cancer or tumor.

In one aspect, the kit comprises a suitable container that comprises one or more specialized microarrays of the invention, one or more EGFR modulators for use in testing cells from patient tissue specimens or patient samples, and instructions for use. The kit may further comprise reagents or materials for monitoring the expression of a biomarker set at the level of mRNA or protein.

In another aspect, the invention provides a kit comprising two or more biomarkers selected from the biomarkers of Table 4.

In yet another aspect, the invention provides a kit comprising at least one of an antibody and a nucleic acid for detecting the presence of at least one of the biomarkers selected from the biomarkers of Table 4. In one aspect, the kit further comprises instructions for determining whether or not a mammal will respond therapeutically to a method of treating cancer comprising administering a compound that inhibits EGFR activity. In another aspect, the instructions comprise the steps of (a) measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4, (b) exposing the mammal to the compound, (c) following the exposing of step (b), measuring in the mammal the level of the at least one biomarker,

wherein a difference in the level of the at least one biomarker measured in step (c) compared to the level of the at least one biomarker measured in step (a) indicates that the mammal will respond therapeutically to said method of treating cancer.

The invention also provides screening assays for determining if a patient will be susceptible or resistant to treatment with one or more EGFR modulators.

The invention also provides a method of monitoring the treatment of a patient having a disease treatable by one or more EGFR modulators.

The invention also provides individualized genetic profiles which are necessary to treat diseases and disorders based on patient response at a molecular level.

The invention also provides specialized microarrays, e.g., oligonucleotide microarrays or cDNA microarrays, comprising one or more biomarkers having expression profiles that correlate with either sensitivity or resistance to one or more EGFR modulators.

The invention also provides antibodies, including polyclonal or monoclonal, directed against one or more biomarkers of the invention.

The invention will be better understood upon a reading of the detailed description of the invention when considered in connection with the accompanying figures.

BRIEF DESCRIPTION OF THE FIGURES:

FIG. 1 illustrates a EGFR biomarker identification and prioritization strategy.

FIG. 2A illustrates the RT-PCR results for EGFR in thirty one colon cancer cell lines to identify cell lines which do not have significant mRNA expression of EGFR.

FIG. 2B illustrates the IC_{50} profile for twenty two colon cancer cell lines with an EGFR inhibitor compound, and determination of sensitive and resistant cell lines.

DETAILED DESCRIPTION OF THE INVENTION:

The invention provides biomarkers that respond to the modulation of a specific signal transduction pathway and also correlate with EGFR modulator sensitivity or resistance. These biomarkers can be employed for predicting response to one or more EGFR modulators. In one aspect, the biomarkers of the invention are those provided in Table 4 and the Sequence Listing, including both polynucleotide and polypeptide sequences.

The biomarkers were determined by an *in vitro* assay employing microarray technology to monitor simultaneously the expression pattern of thousands of discrete genes in untreated cells, whose response to the modulation of a signal transduction pathway, in particular the EGFR pathway, was tested on untreated cells whose sensitivity to EGFR modulators was tested. The biomarkers have expression levels in the cells that are dependent on the activity of the EFGR signal transduction pathway and that are also highly correlated with EGFR modulator sensitivity exhibited by the cells. Biomarkers serve as useful molecular tools for predicting a response to EGFR modulators, preferably biological molecules, small molecules, and the like that affect EGFR kinase activity via direct or indirect inhibition or antagonism of EGFR kinase function or activity.

EGFR MODULATORS

As used herein, the term "EGFR modulator" is intended to mean a compound or drug that is a biological molecule or a small molecule that directly or indirectly modulates EGFR activity or the EGFR signal transduction pathway. Thus, compounds or drugs as used herein is intended to include both small molecules and biological molecules. Direct or indirect modulation includes activation or inhibition of EGFR activity or the EGFR signal transduction pathway. In one aspect, inhibition refers to inhibition of the binding of EGFR to an EGFR ligand such as, for example, EGF. In another aspect, inhibition refers to inhibition of the kinase activity of EGFR.

EGFR modulators include, for example, EGFR specific ligands, small molecule EGFR inhibitors, and EGFR monoclonal antibodies. In one aspect, the EGFR modulator inhibits EGFR activity and/or inhibits the EGFR signal transduction

pathway. In another aspect, the EGFR modulator is an EGFR antibody that inhibits EGFR activity and/or inhibits the EGFR signal transduction pathway.

EGFR modulators include biological molecules or small molecules. Biological molecules include all lipids and polymers of monosaccharides, amino acids, and nucleotides having a molecular weight greater than 450. Thus, biological molecules include, for example, oligosaccharides and polysaccharides; oligopeptides, polypeptides, peptides, and proteins; and oligonucleotides and polynucleotides. Oligonucleotides and polynucleotides include, for example, DNA and RNA.

Biological molecules further include derivatives of any of the molecules described above. For example, derivatives of biological molecules include lipid and glycosylation derivatives of oligopeptides, polypeptides, peptides, and proteins.

Derivatives of biological molecules further include lipid derivatives of oligosaccharides and polysaccharides, e.g., lipopolysaccharides. Most typically, biological molecules are antibodies, or functional equivalents of antibodies. Functional equivalents of antibodies have binding characteristics comparable to those of antibodies, and inhibit the growth of cells that express EGFR. Such functional equivalents include, for example, chimerized, humanized, and single chain antibodies as well as fragments thereof.

Functional equivalents of antibodies also include polypeptides with amino acid sequences substantially the same as the amino acid sequence of the variable or hypervariable regions of the antibodies. An amino acid sequence that is substantially the same as another sequence, but that differs from the other sequence by means of one or more substitutions, additions, and/or deletions, is considered to be an equivalent sequence. Preferably, less than 50%, more preferably less than 25%, and still more preferably less than 10%, of the number of amino acid residues in a sequence are substituted for, added to, or deleted from the protein.

The functional equivalent of an antibody is preferably a chimerized or humanized antibody. A chimerized antibody comprises the variable region of a non-human antibody and the constant region of a human antibody. A humanized antibody comprises the hypervariable region (CDRs) of a non-human antibody. The variable region other than the hypervariable region, e.g., the framework variable region, and the constant region of a humanized antibody are those of a human antibody.

Suitable variable and hypervariable regions of non-human antibodies may be derived from antibodies produced by any non-human mammal in which monoclonal antibodies are made. Suitable examples of mammals other than humans include, for example, rabbits, rats, mice, horses, goats, or primates.

Functional equivalents further include fragments of antibodies that have binding characteristics that are the same as, or are comparable to, those of the whole antibody. Suitable fragments of the antibody include any fragment that comprises a sufficient portion of the hypervariable (i.e., complementarity determining) region to bind specifically, and with sufficient affinity, to EGFR tyrosine kinase to inhibit growth of cells that express such receptors.

Such fragments may, for example, contain one or both Fab fragments or the $F(ab')_2$ fragment. Preferably, the antibody fragments contain all six complementarity determining regions of the whole antibody, although functional fragments containing fewer than all of such regions, such as three, four, or five CDRs, are also included.

In one aspect, the fragments are single chain antibodies, or Fv fragments. Single chain antibodies are polypeptides that comprise at least the variable region of the heavy chain of the antibody linked to the variable region of the light chain, with or without an interconnecting linker. Thus, Fv fragment comprises the entire antibody combining site. These chains may be produced in bacteria or in eukaryotic cells.

The antibodies and functional equivalents may be members of any class of immunoglobulins, such as IgG, IgM, IgA, IgD, or IgE, and the subclasses thereof. In one aspect, the antibodies are members of the IgG1 subclass. The functional equivalents may also be equivalents of combinations of any of the above classes and subclasses.

In one aspect, EGFR antibodies can be selected from chimerized, humanized, fully human, and single chain antibodies derived from the murine antibody 225 described in U.S. Patent No. 4,943,533 to Mendelsohn et al. In one aspect, the 225 derived antibodies have the following hypervariable (CDR) regions of the light and heavy chain, wherein the amino acid sequences are indicated below the nucleotide sequences:

HEAVY CHAIN HYPERVARIABLE REGIONS (VH):

CDR1

AACTATGGTGTACAC (SEQ ID NO: 179)

N Y G V H (SEQ ID NO: 180)

CDR2

GTGATATGGAGTGGTGGAAACACAGACTATAATACACCTTTCACATCC (SEQ ID NO: 181)

V I W S G G N T D Y N T P F T S (SEQ ID NO: 182)

CDR3

GCCCTCACCTACTATGATTACGAGTTTGCTTAC (SEQ ID NO: 183)

A L T Y Y D Y E F A Y (SEQ ID NO: 184)

LIGHT CHAIN HYPERVARIABLE REGIONS (VL):

CDR1

AGGGCCAGTCAGAGTATTGGCACAAACATACAC (SEQ ID NO: 185)

R A S Q S I G T N I H (SEQ ID NO: 186)

CDR2

GCTTCTGAGTCTATCTCT (SEQ ID NO: 187)

A S E S I S (SEQ ID NO: 188)

CDR3

CAACAAAATAATAACTGGCCAACCACG (SEQ ID NO: 189)

Q Q N N N W P T T (SEQ ID NO: 190)

In another aspect, the EGFR antibody can be selected from the antibodies described in U.S. Patent No. 6,235,883 to Jakobovits et al., U.S. Patent No. 5,558,864 to Bendi et al., and U.S. Patent No. 5,891,996 to Mateo de Acosta del Rio et al.

In addition to the biological molecules discussed above, the EGFR modulators useful in the invention may also be small molecules. Any molecule that is not a biological molecule is considered herein to be a small molecule. Some examples of small molecules include organic compounds, organometallic compounds, salts of organic and organometallic compounds, saccharides, amino acids, and nucleotides. Small molecules further include molecules that would otherwise be considered biological molecules, except their molecular weight is not greater than 450. Thus,

small molecules may be lipids, oligosaccharides, oligopeptides, and oligonucleotides and their derivatives, having a molecular weight of 450 or less.

It is emphasized that small molecules can have any molecular weight. They are merely called small molecules because they typically have molecular weights less than 450. Small molecules include compounds that are found in nature as well as synthetic compounds. In one embodiment, the EGFR modulator is a small molecule that inhibits the growth of tumor cells that express EGFR. In another embodiment, the EGFR modulator is a small molecule that inhibits the growth of refractory tumor cells that express EGFR.

Numerous small molecules have been described as being useful to inhibit EGFR. For example, U.S. Patent No. 5,656,655 to Spada et al. discloses styryl substituted heteroaryl compounds that inhibit EGFR. The heteroaryl group is a monocyclic ring with one or two heteroatoms, or a bicyclic ring with 1 to about 4 heteroatoms, the compound being optionally substituted or polysubstituted.

U.S. Patent No. 5,646,153 to Spada et al. discloses bis mono and/or bicyclic aryl heteroaryl, carbocyclic, and heterocarbocyclic compounds that inhibit EGFR.

U.S. Patent No. 5,679,683 to Bridges et al. discloses tricyclic pyrimidine compounds that inhibit the EGFR. The compounds are fused heterocyclic pyrimidine derivatives described at column 3, line 35 to column 5, line 6.

U.S. Patent No. 5,616,582 to Barker discloses quinazoline derivatives that have receptor tyrosine kinase inhibitory activity.

Fry et al., Science 265, 1093-1095 (1994) in Figure 1 discloses a compound having a structure that inhibits EGFR.

Osherov et al. disclose tyrphostins that inhibit EGFR/HER1 and HER 2, particularly those in Tables I, II, III, and IV.

U.S. Patent No. 5,196,446 to Levitzki et al. discloses heteroarylethenediyl or heteroarylethendeiylaryl compounds that inhibit EGFR, particularly from column 2, line 42 to column 3, line 40.

Panek et al., Journal of Pharmacology and Experimental Therapeutics 283, 1433-1444 (1997) discloses a compound identified as PD166285 that inhibits the EGFR, PDGFR, and FGFR families of receptors. PD166285 is identified as 6-(2,6-

dichlorophenyl)-2-(4-(2-diethylaminoethyoxy)phenylamino)-8-methyl-8H-pyrido(2,3-d)pyrimidin-7-one having the structure shown in Figure 1 on page 1436.

BIOMARKERS AND BIOMARKER SETS

The invention includes individual biomarkers and biomarker sets having both diagnostic and prognostic value in disease areas in which signaling through EGFR or the EGFR pathway is of importance, e.g., in cancers or tumors, in immunological disorders, conditions or dysfunction, or in disease states in which cell signaling and/or cellular proliferation controls are abnormal or aberrant. The biomarker sets comprise a plurality of biomarkers such as, for example, a plurality of the biomarkers provided in Table 4 below, that highly correlate with resistance or sensitivity to one or more EGFR modulators.

The biomarker sets of the invention enable one to predict or reasonably foretell the likely effect of one or more EGFR modulators in different biological systems or for cellular responses. The biomarker sets can be used in *in vitro* assays of EGFR modulator response by test cells to predict *in vivo* outcome. In accordance with the invention, the various biomarker sets described herein, or the combination of these biomarker sets with other biomarkers or markers, can be used, for example, to predict how patients with cancer might respond to therapeutic intervention with one or more EGFR modulators.

A biomarker set of cellular gene expression patterns correlating with sensitivity or resistance of cells following exposure of the cells to one or more EGFR modulators provides a useful tool for screening one or tumor samples before treatment with the EGFR modulator. The screening allows a prediction of cells of a tumor sample exposed to one or more EGFR modulators, based on the expression results of the biomarker set, as to whether or not the tumor, and hence a patient harboring the tumor, will or will not respond to treatment with the EGFR modulator.

The biomarker or biomarker set can also be used as described herein for monitoring the progress of disease treatment or therapy in those patients undergoing treatment for a disease involving an EGFR modulator.

The biomarkers serve as targets for the development of therapies for disease treatment. Such targets may be particularly applicable to treatment of breast disease,

such as breast cancers or tumors. Indeed, because these biomarkers are differentially expressed in sensitive and resistant cells, their expression patterns are correlated with relative intrinsic sensitivity of cells to treatment with EGFR modulators. Accordingly, the biomarkers highly expressed in resistant cells may serve as targets for the development of new therapies for the tumors which are resistant to EGFR modulators, particularly EGFR inhibitors.

MICROARRAYS

The invention also includes specialized microarrays, e.g., oligonucleotide microarrays or cDNA microarrays, comprising one or more biomarkers, showing expression profiles that correlate with either sensitivity or resistance to one or more EGFR modulators. Such microarrays can be employed in *in vitro* assays for assessing the expression level of the biomarkers in the test cells from tumor biopsies, and determining whether these test cells are likely to be resistant or sensitive to EGFR modulators. For example, a specialized microarray can be prepared using all the biomarkers, or subsets thereof, as described herein and shown in Table 4. Cells from a tissue or organ biopsy can be isolated and exposed to one or more of the EGFR modulators. Following application of nucleic acids isolated from both untreated and treated cells to one or more of the specialized microarrays, the pattern of gene expression of the tested cells can be determined and compared with that of the biomarker pattern from the control panel of cells used to create the biomarker set on the microarray. Based upon the gene expression pattern results from the cells that underwent testing, it can be determined if the cells show a resistant or a sensitive profile of gene expression. Whether or not the tested cells from a tissue or organ biopsy will respond to one or more of the EGFR modulators and the course of treatment or therapy can then be determined or evaluated based on the information gleaned from the results of the specialized microarray analysis.

ANTIBODIES

The invention also includes antibodies, including polyclonal or monoclonal, directed against one or more of the polypeptide biomarkers. Such antibodies can be used in a variety of ways, for example, to purify, detect, and target the biomarkers of

the invention, including both *in vitro* and *in vivo* diagnostic, detection, screening, and/or therapeutic methods.

KITS

The invention also includes kits for determining or predicting whether a patient would be susceptible or resistant to a treatment that comprises one or more EGFR modulators. The patient may have a cancer or tumor such as, for example, a breast cancer or tumor. Such kits would be useful in a clinical setting for use in testing a patient's biopsied tumor or cancer samples, for example, to determine or predict if the patient's tumor or cancer will be resistant or sensitive to a given treatment or therapy with an EGFR modulator. The kit comprises a suitable container that comprises: one or more microarrays, e.g., oligonucleotide microarrays or cDNA microarrays, that comprise those biomarkers that correlate with resistance and sensitivity to EGFR modulators, particularly EGFR inhibitors; one or more EGFR modulators for use in testing cells from patient tissue specimens or patient samples; and instructions for use. In addition, kits contemplated by the invention can further include, for example, reagents or materials for monitoring the expression of biomarkers of the invention at the level of mRNA or protein, using other techniques and systems practiced in the art such as, for example, RT-PCR assays, which employ primers designed on the basis of one or more of the biomarkers described herein, immunoassays, such as enzyme linked immunosorbent assays (ELISAs), immunoblotting, e.g., Western blots, or *in situ* hybridization, and the like, as further described herein.

APPLICATION OF BIOMARKERS AND BIOMARKER SETS

The biomarkers and biomarker sets may be used in different applications. Biomarker sets can be built from any combination of biomarkers listed in Table 4 to make predictions about the likely effect of any EGFR modulator in different biological systems. The various biomarkers and biomarker sets described herein can be used, for example, as diagnostic or prognostic indicators in disease management, to predict how patients with cancer might respond to therapeutic intervention with compounds that modulate the EGFR, and to predict how patients might respond to

therapeutic intervention that modulates signaling through the entire EGFR regulatory pathway.

While the data described herein were generated in cell lines that are routinely used to screen and identify compounds that have potential utility for cancer therapy, the biomarkers have both diagnostic and prognostic value in other diseases areas in which signaling through EGFR or the EGFR pathway is of importance, e.g., in immunology, or in cancers or tumors in which cell signaling and/or proliferation controls have gone awry.

In the examples described below, the sensitivity and resistance classifications in the twenty two colon cell lines were similar for the two EGFR modulators tested. Therefore, the biomarkers of the invention are expected to have both diagnostic and prognostic value for other compounds that modulate EGFR or the EGFR signaling pathways.

Those having skill in the pertinent art will appreciate that the EGFR signaling pathway is used and functional in cell types other than cell lines of colon tissue. Therefore, the described biomarkers are expected to have utility for predicting drug sensitivity or resistance to compounds that interact with or inhibit the EGFR activity in cells from other tissues or organs associated with a disease state, or cancers or tumors derived from other tissue types. Non-limiting examples of such cells, tissues and organs include breast, colon, lung, prostate, testes, ovaries, cervix, esophagus, pancreas, spleen, liver, kidney, stomach, lymphocytic and brain, thereby providing a broad and advantageous applicability to the biomarkers described herein. Cells for analysis can be obtained by conventional procedures as known in the art, for example, tissue biopsy, aspiration, sloughed cells, e.g., colonocytes, clinical or medical tissue or cell sampling procedures.

In accordance with the invention, cells from a patient tissue sample, e.g., a tumor or cancer biopsy, can be assayed to determine the expression pattern of one or more biomarkers prior to treatment with one or more EGFR modulators. Success or failure of a treatment can be determined based on the biomarker expression pattern of the cells from the test tissue (test cells), e.g., tumor or cancer biopsy, as being relatively similar or different from the expression pattern of a control set of the one or more biomarkers. Thus, if the test cells show a biomarker expression profile which

corresponds to that of the biomarkers in the control panel of cells which are sensitive to the EGFR modulator, it is highly likely or predicted that the individual's cancer or tumor will respond favorably to treatment with the EGFR modulator. By contrast, if the test cells show a biomarker expression pattern corresponding to that of the biomarkers of the control panel of cells which are resistant to the EGFR modulator, it is highly likely or predicted that the individual's cancer or tumor will not respond to treatment with the EGFR modulator.

The invention also provides a method of monitoring the treatment of a patient having a disease treatable by one or more EGFR modulators. The isolated test cells from the patient's tissue sample, e.g., a tumor biopsy or tumor sample, can be assayed to determine the expression pattern of one or more biomarkers before and after exposure to an EGFR modulator wherein, preferably, the EGFR modulator is an EGFR inhibitor. The resulting biomarker expression profile of the test cells before and after treatment is compared with that of one or more biomarkers as described and shown herein to be highly expressed in the control panel of cells that are either resistant or sensitive to an EGFR modulator. Thus, if a patient's response is sensitive to treatment by an EGFR modulator, based on correlation of the expression profile of the one or biomarkers, the patient's treatment prognosis can be qualified as favorable and treatment can continue. Also, if, after treatment with an EGFR modulator, the test cells don't show a change in the biomarker expression profile corresponding to the control panel of cells that are sensitive to the EGFR modulator, it can serve as an indicator that the current treatment should be modified, changed, or even discontinued. This monitoring process can indicate success or failure of a patient's treatment with an EGFR modulator and such monitoring processes can be repeated as necessary or desired.

The biomarkers of the invention can be used to predict an outcome prior to having any knowledge about a biological system. Essentially, a biomarker can be considered to be a statistical tool. Biomarkers are useful primarily in predicting the phenotype that is used to classify the biological system. In an embodiment of the invention, the goal of the prediction is to classify cancer cells as having an active or inactive EGFR pathway. Cancer cells with an inactive EGFR pathway can be considered resistant to treatment with an EGFR modulator. An inactive EGFR

pathway is defined herein as a non-significant expression of the EGFR or by a classification as “resistant” or “sensitive” based on the IC_{50} value of each colon cell line to a compound (EGFR inhibitor compound BMS-461453) exemplified herein.

A number of the biomarker described herein are known to be regulated by EGFR, e.g., mucin 2 (J Biol Chem. 2002 Aug 30;277(35):32258-67). Another biomarker, betacellulin, is know to be an EGFR ligand (Biochem Biophys Res Commun. 2002 Jun 28;294(5):1040-6). A functional relationship of the top biomarkers to the EGFR is expected, since biomarkers that contribute to high biomarker accuracy are likely to play a functional role in the pathway that is being modulated. For example, Perception therapy (i.e., antibody that binds to the Her2 receptor and prevents function via internalization) is indicated when the Her2 gene is overexpressed. It is unlikely that a therapy will have any therapeutic effect if the target enzyme is not expressed.

However, although the complete function of all of the biomarkers are not currently known, some of the biomarkers are likely to be directly or indirectly involved in the EGFR signaling pathway. In addition, some of the biomarkers may function in the metabolic or other resistance pathways specific to the EGFR modulators tested. Notwithstanding, knowledge about the function of the biomarkers is not a requisite for determining the accuracy of a biomarker according to the practice of the invention.

DISCOVERY OF BIOMARKERS

An approach has been discovered in which biomarkers were identified whose expression patterns, in a subset of cell lines, correlated to and can be used as an *in vitro* marker of cellular response to treatment or therapy with one compound, or with a combination or series of compounds, that are known to inhibit or activate the function of a protein, enzyme, or molecule (e.g., a receptor) that is directly or indirectly involved in cell proliferation, cell responses to external stimuli, (such as ligand binding), or signal transduction, e.g., a receptor tyrosine kinase. Preferred are antagonists or inhibitors of the function of a given protein, e.g., a receptor tyrosine kinase.

Two analytical strategies were deployed to discover biomarkers useful for predicting the sensitivity or resistance of cancer cells to treatment with one or more EGFR modulators. FIG. 1 illustrates the EGFR biomarker identification and prioritization strategy. In one strategy, the mRNA expression level of EGFR was used to identify six colon cancer cell lines with, inferred from the mRNA expression level, no significant presence of the EGFR protein and hence no significant activity of the EGFR pathway (FIG. 2A). In subsequent analyses, biomarkers were identified that had no significant mRNA expression level in the six cell lines and no inferred presence of the EGFR protein. Further, it was required that these biomarkers would have a significant mRNA expression level in at least six other cell lines.

In a second strategy, an EGFR specific tyrosine kinase inhibitor compound was used to determine compound sensitivity in a panel of twenty two colon cancer cell lines following exposure of the cells to the compound. Some of the cell lines were determined to be resistant to treatment with the inhibitor compound, while others were determined to be sensitive to the inhibitor (FIG. 2B). A subset of the cell lines examined provided an expression pattern or profile of biomarkers that correlated to a response by the cells to the EGFR inhibitor compound as well as the absence of significant EGFR expression as thus could serve as biomarkers.

By combining the use of EGFR co-regulation studies in tumor cells with experimental studies in cultured cells as a model of *in vivo* effects, the invention advantageously focuses on cell-intrinsic properties that are exposed in cell culture to identify biomarkers that predict compound sensitivity and resistance. The discovery and identification of biomarkers in tumor cells and cell lines assayed *in vitro* can be used to predict responses to one or more EGFR modulators *in vivo* and, thus, can be extended to clinical situations in which the same biomarkers are used to predict patients' responses to one or more EGFR modulators and treatments comprising one or more EGFR modulators.

As described in the examples below, oligonucleotide microarrays were used to measure the expression levels of over 44,792 probe sets in a panel of thirty one untreated colon cancer cell lines for which the expression status of the EGFR and the drug sensitivity to EGFR inhibitor compounds was determined. This analysis was performed to determine whether the gene expression signatures of untreated cells

were sufficient for the prediction of sensitivity of the disease to inhibition of the EGFR by small molecule or biological molecule compounds. Through data analysis, biomarkers were identified whose expression levels were found to be highly counter-correlated with the status of the EGFR and correlated with the drug sensitivity. In addition, the treatment of cells with a small molecule EGFR inhibitor also provided gene expression signatures predictive of sensitivity to the compound.

The means of performing the gene expression and biomarker identification analyses embraced by the invention is described in further detail and without limitation below.

IC_{50} Determination and Phenotype Classification Based on Sensitivity of Twenty-two Colon Cancer Cell lines to EGFR Inhibitor Compounds

Twenty two colon cell lines were treated with a small molecule EGFR inhibitor (BMS-461453) to determine the individual IC_{50} value. The IC_{50} for each cell line was assessed by MTS assays. The average IC_{50} values along with standard deviations were calculated from two to five individual determinations for each cell line. As shown in FIG. 2B, a 4-fold variation in the IC_{50} values was observed for the small molecule EGFR inhibitor among the 22 colon cancer cell lines. The IC_{50} unit is μM.

All cell lines with at least a 1.75 fold lower IC_{50} than the most resistant cell lines were considered to be sensitive to treatment with the small molecule EGFR inhibitor. FIG. 2B represents the resistance/sensitivity classifications of the twenty-two colon cell lines to the small molecule EGFR inhibitor. Five cell lines were classified as sensitive and seventeen cell lines as resistant.

Description of the Strategy for Identifying Biomarkers

Biomarkers were discovered based on two criteria: (i) the correlation of their mRNA expression level to the expression of EGFR in cell lines with insignificant EGFR expression and (ii) the correlation of the IC_{50} values for the small molecule EGFR inhibitor BMS-461453 with gene expression levels.

For each of these two biomarker selection strategies, two independent "discovery" probe set lists were established by using statistical filters with different

stringency levels to identify genes whose expression correlated with either EGFR status or IC_{50} value. These statistical methods are described below and resulted in four discovery probe set lists: EGFR-A and EGFR-B (correlation with no significant EGFR expression) and IC-50-A, IC-50-B (correlation with IC_{50} expression), the A-lists containing probe sets selected by more stringent conditions. To then establish two biomarker probe set lists, probe sets that appeared in both EGFR-A and IC-50 B were selected (Biomarker Probe Set List A, Table 2) and probe sets that appeared in both EGFR-B and IC-50-A were selected (Biomarker Probe Set List B, Table 3).

Identifying Genes that Significantly Correlate with EGFR status classification

RT-PCR expression data for EGFR were obtained from thirty one colon cancer cell lines and six cell lines with a significantly lower expression level of EGFR compared to the other cell lines were identified as described in Example 1 below. (FIG. 2A). Expression profiling data of 44,792 probe sets represented on the HG-U133 array set for all thirty one untreated colon cancer cell lines were obtained and analyzed for the identification of probe sets which would be correlated with the above described six cell lines with no significant mRNA expression of EGFR. For the discovery probe set list EGFR-A, all probe sets which were judged to be absent by the Affymetrix Mas 5.0 software in six of the six colon cancer cell lines with significantly lower expression of EGFR were identified. Second, it was required that these probe sets would be judged to be present in at least six cell lines of the twenty five cell lines classified as having significant mRNA expression of the EGFR. This analytical strategy resulted in the identification of 280 probe sets that could be analyzed in comparison to the discovery probe set list IC-50-B.

The discovery probe set list EGFR-B was generated by selecting all probe sets which were judged to be absent by the Affymetrix Mas 5.0 software in five of the six colon cancer cell lines with significantly lower expression of EGFR and which would be present in at least six cell lines of the twenty five cell lines classified as having significant mRNA expression of the EGFR. Discovery probe set list EGR-B contains 1,852 probe sets (U133A: 876; U133B: 976).

Identifying Genes that Significantly Correlate with Drug Resistance/Sensitivity Classification

Expression profiling data of 44,792 probe sets represented on the HG-U133 array set for twenty two untreated colon cell lines were obtained and preprocessed as described in Example 1 below. These data were analyzed using the Student's TTEST to identify genes whose expression patterns were strongly correlated with the drug resistance/sensitivity classification. Table 1 provides the resistance/sensitivity phenotype classification of the twenty two colon cell lines for the EGFR antagonist BMS-461453 based on the IC_{50} results. The mean IC_{50} values along with standard deviations (SD) were calculated from 2 to 5 individual determinations for each cell line as shown. The mean IC_{50} across the twenty two colon cell lines for BMS-461453 was calculated and used to normalize the IC_{50} data for each cell line. All cell lines with at least a 1.75 fold lower IC_{50} than the most resistant cell lines were considered to be sensitive to treatment with BMS-461453. The cell lines designated with an asterisk are defined as being sensitive to the drug treatment.

TABLE 1 - Resistance/Sensitivity Phenotype Classification of Twenty Two Colon Cell Lines

Cell lines	**IC_{50} (µM)**	**SD**
CCD_33C0*	2	1.28
LOVO*	2.3	2.28
*LS174T**	3.5	1.93
Caco2*	5.5	3.97
SW403*	5.7	4.94
CCD18Co	7.1	3.84
SW837	7.2	3.30
Sk-Co-1	9	2.02
MIP	9.7	0.52
SW1417	10	0.00
HT-29	10	0.00
T84	10	0.00
CX-1	10	0.00
Colo-205	10	0.00
Colo-201	10	0.00
Colo320HSR	10	0.00
HCT8	10	0.00
Colo320DM	10	0.00
SW480	10	0.00
HCT116	10	0.00
SW620	10	0.00
HCT116S542	10	0.00

An "idealized expression pattern" corresponds to a gene that is uniformly high in one class (e.g., sensitive) and uniformly low in the other (e.g., resistant). Initially, a Student TTEST was performed in which a T value was obtained for each probe set. Once a T value was generated, its corresponding confidence value (P) was found on a standard table of significance. The confidence value is a measure of the probability to observe a certain mean expression difference between two groups by chance alone and is obtained using the following formula:

$$T(g.c) = (X_1 - X_2) / (var_1/n_1 + var_2/n_2)^{1/2}$$

wherein,

T(g,c) represents the T value between expression for gene g and the sensitivity/resistance classification c;

X_1 represents mean gene expression level of samples in class 1;

X_2 represents mean gene expression level of samples in class 2;

var_1 represents variance of gene expression for samples in class 1;

var_2 represents variance of gene expression for samples in class 2;

n_1 represents number of samples in class 1;

n_2 represents number of samples in class 2; and

corresponding confidence value (P) for T values are obtained from a standard table of significance.

To generate discovery probe set list IC-50-B, a confidence value of 0.05 or lower was used as the cut off for probe sets to be included in the list. Discovery probe set list IC-50-B contains 5,050 probe sets (U133A: 2,498; U133B: 2,552).

Discovery probe set list IC-50-A was generated using the Pearson correlation coefficient (a dimensionless index that ranges from -1.0 to 1.0). This value was calculated by treating the IC_{50} data as continuous variables and by utilizing a linear regression model to correlate gene expression levels with IC_{50} values for twenty-two colon cell lines. Probe sets with a correlation coefficient less than –0.5 were selected ($p < 0.02$), a total of 902 probe sets (U133A: 467; U133B: 435).

Finally, two separate biomarker probe set lists were generated, biomarker probe set lists A and B, by identifying probe sets which were present in EGFR-A and IC-50-B (Biomarker Probe Set List A) (Table 2) or were present in EGFR-B and IC-50-A (Biomarker Probe Set List B) (Table 3).

The biomarker probe set list A (Table 2) contains a total of 74 probe sets (U133A: 43; U133B: 31) and provides the polynucleotides identified to be biomarkers of EGFR antagonist sensitivity employing strategy A. With strategy A, polynucleotides were required to satisfy a stringent criteria for EGFR status coregulation and a less stringent condition for correlation to IC_{50} values. Namely, the polynucleotides had to be called absent by the Affymetrix software in six out of the

six cell lines with lowest expression of EGFR and be differentially expressed in the sensitive and resistance cell lines with a P value equal to or less than 0.05.

TABLE 2 - Biomarker Probe Set List A

Unigene Title	Affymetrix Description	Affymetrix probe set
hemoglobin, alpha 1	gb:BC005931.1 /DEF=Homo sapiens, hemoglobin, alpha 2, clone MGC:14541, mRNA, complete cds. /FEA=mRNA /PROD=hemoglobin, alpha 2 /DB_XREF=gi:13543547 /FL=gb:BC005931.1	211745_x_at
dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2)	gb:M80536.1 /DEF=H.sapiens dipeptidyl peptidase IV (DPP4) mRNA, complete cds. /FEA=mRNA /GEN=DPP4 /PROD=dipeptidyl peptidase IV /DB_XREF=gi:181569 /UG=Hs.44926 dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) /FL=gb:M80536.1 gb:NM_001935.1	203716_s_at
spondin 1, (f-spondin) extracellular matrix protein	Consensus includes gb:AI885290 /FEA=EST /DB_XREF=gi:5590454 /DB_XREF=est:wl92a04.x1 /CLONE=IMAGE:2432334 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein	213994_s_at
3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial)	gb:NM_005518.1 /DEF=Homo sapiens 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) (HMGCS2), mRNA. /FEA=mRNA /GEN=HMGCS2 /PROD=3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2(mitochondrial) /DB_XREF=gi:5031750 /UG=Hs.59889 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) /FL=gb:NM_005518.1	204607_at
mucin 2, intestinal/tracheal	gb:NM_002457.1 /DEF=Homo sapiens mucin 2, intestinaltracheal (MUC2), mRNA. /FEA=mRNA /GEN=MUC2 /PROD=mucin 2, intestinaltracheal /DB_XREF=gi:4505284 /UG=Hs.315 mucin 2, intestinaltracheal /FL=gb:NM_002457.1 gb:L21998.1	204673_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	gb:NM_000492.2 /DEF=Homo sapiens cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) (CFTR), mRNA. /FEA=mRNA /GEN=CFTR /PROD=cystic fibrosis transmembrane conductanceregulator, ATP-binding cassette (sub-family C, member 7) /DB_XREF=gi:6995995	205043_at

	/UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) /FL=gb:NM_000492.2	
CUG triplet repeat, RNA-binding protein 2	Consensus includes gb:N36839 /FEA=EST /DB_XREF=gi:1157981 /DB_XREF=est:yy35f07.s1 /CLONE=IMAGE:273253 /UG=Hs.211610 CUG triplet repeat, RNA-binding protein 2 /FL=gb:U69546.1 gb:AF036956.1 gb:AF090694.1 gb:NM_006561.1	202156_s_at
nuclear receptor subfamily 3, group C, member 2	gb:NM_000901.1 /DEF=Homo sapiens nuclear receptor subfamily 3, group C, member 2 (NR3C2), mRNA. /FEA=mRNA /GEN=NR3C2 /PROD=nuclear receptor subfamily 3, group C, member 2 /DB_XREF=gi:4505198 /UG=Hs.1790 nuclear receptor subfamily 3, group C, member 2 /FL=gb:M16801.1 gb:NM_000901.1	205259_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	Consensus includes gb:W60595 /FEA=EST /DB_XREF=gi:1367354 /DB_XREF=est:zc91b04.s1 /CLONE=IMAGE:338479 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	215702_s_at
cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2	gb:NM_000775.1 /DEF=Homo sapiens cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 (CYP2J2), mRNA. /FEA=mRNA /GEN=CYP2J2 /PROD=cytochrome P450, subfamily IIJ (arachidonic acidepoxygenase) polypeptide 2 /DB_XREF=gi:4503226 /UG=Hs.152096 cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 /FL=gb:U37143.1 gb:NM_000775.1	205073_at
cystatin S	gb:NM_001899.1 /DEF=Homo sapiens cystatin S (CST4), mRNA. /FEA=mRNA /GEN=CST4 /PROD=cystatin S /DB_XREF=gi:4503108 /UG=Hs.56319 cystatin S /FL=gb:NM_001899.1	206994_at
spondin 1, (f-spondin) extracellular matrix protein	Consensus includes gb:AI885290 /FEA=EST /DB_XREF=gi:5590454 /DB_XREF=est:wl92a04.x1 /CLONE=IMAGE:2432334 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein	213993_at
fibroblast growth factor receptor 2 (bacteria-expressed kinase,	gb:NM_022969.1 /DEF=Homo sapiens fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome,	203638_s_at

keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome)	Pfeiffer syndrome, Jackson-Weiss syndrome) (FGFR2), transcript variant 2, mRNA. /FEA=mRNA /GEN=FGFR2 /PROD=fibroblast growth factor receptor 2, isoform 2precursor /DB_XREF=gi:13186252 /UG=Hs.278581 fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome) /FL=gb:NM_022969.1 gb:M97193.1 gb:M80634.1	
mucin 3B	Consensus includes gb:AB038783.1 /DEF=Homo sapiens MUC3B mRNA for intestinal mucin, partial cds. /FEA=mRNA /GEN=MUC3B /PROD=intestinal mucin /DB_XREF=gi:9929917 /UG=Hs.129782 mucin 3A, intestinal	214898_x_at
AA	Consensus includes gb:AV728958 /FEA=EST /DB_XREF=gi:10838379 /DB_XREF=est:AV728958 /CLONE=HTCBYF04 /UG=Hs.150443 KIAA0320 protein	212703_at
CUG triplet repeat, RNA-binding protein 2	gb:NM_006561.1 /DEF=Homo sapiens CUG triplet repeat, RNA-binding protein 2 (CUGBP2), mRNA. /FEA=mRNA /GEN=CUGBP2 /PROD=CUG triplet repeat, RNA-binding protein 2 /DB_XREF=gi:5729815 /UG=Hs.211610 CUG triplet repeat, RNA-binding protein 2 /FL=gb:U69546.1 gb:AF036956.1 gb:AF090694.1 gb:NM_006561.1	202158_s_at
spondin 1, (f-spondin) extracellular matrix protein	gb:AB051390.1 /DEF=Homo sapiens mRNA for VSGPF-spondin, complete cds. /FEA=mRNA /PROD=VSGPF-spondin /DB_XREF=gi:11320819 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein /FL=gb:AB051390.1	209437_s_at
mucin 3B	Consensus includes gb:AF113616 /DEF=Homo sapiens intestinal mucin 3 (MUC3) gene, partial cds /FEA=mRNA /DB_XREF=gi:6466800 /UG=Hs.129782 mucin 3A, intestinal	214676_x_at
EphA1	gb:NM_005232.1 /DEF=Homo sapiens EphA1 (EPHA1), mRNA. /FEA=mRNA /GEN=EPHA1 /PROD=EphA1 /DB_XREF=gi:4885208 /UG=Hs.89839 EphA1 /FL=gb:M18391.1 gb:NM_005232.1	205977_s_at
matrilin 3	gb:NM_002381.2 /DEF=Homo sapiens matrilin 3 (MATN3) precursor, mRNA. /FEA=mRNA /GEN=MATN3 /PROD=matrilin 3 precursor /DB_XREF=gi:13518040 /UG=Hs.278461	206091_at

	matrilin 3 /FL=gb:NM_002381.2	
bone morphogenetic protein 2	gb:NM_001200.1 /DEF=Homo sapiens bone morphogenetic protein 2 (BMP2), mRNA. /FEA=mRNA /GEN=BMP2 /PROD=bone morphogenetic protein 2 precursor /DB_XREF=gi:4557368 /UG=Hs.73853 bone morphogenetic protein 2 /FL=gb:NM_001200.1	205290_s_at
interferon consensus sequence binding protein 1	Consensus includes gb:AI073984 /FEA=EST /DB_XREF=gi:3400628 /DB_XREF=est:oy66c05.x1 /CLONE=IMAGE:1670792 /UG=Hs.14453 interferon consensus sequence binding protein 1 /FL=gb:M91196.1 gb:NM_002163.1	204057_at
retinoic acid receptor responder (tazarotene induced) 1	Consensus includes gb:AI669229 /FEA=EST /DB_XREF=gi:4834003 /DB_XREF=est:wc13e06.x1 /CLONE=IMAGE:2315074 /UG=Hs.82547 retinoic acid receptor responder (tazarotene induced) 1	221872_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	Consensus includes gb:W60595 /FEA=EST /DB_XREF=gi:1367354 /DB_XREF=est:zc91b04.s1 /CLONE=IMAGE:338479 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	215703_at
fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome)	gb:M87771.1 /DEF=Human secreted fibroblast growth factor receptor (K-sam-III) mRNA, complete cds. /FEA=mRNA /GEN=K-sam-III /PROD=fibroblast growth factor receptor /DB_XREF=gi:186781 /UG=Hs.278581 fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome) /FL=gb:NM_022970.1 gb:M87771.1	208228_s_at
myosin, heavy polypeptide 13, skeletal muscle	gb:NM_003802.1 /DEF=Homo sapiens myosin, heavy polypeptide 13, skeletal muscle (MYH13), mRNA. /FEA=mRNA /GEN=MYH13 /PROD=myosin, heavy polypeptide 13, skeletal muscle /DB_XREF=gi:11321578 /UG=Hs.278488 myosin, heavy polypeptide 13, skeletal muscle /FL=gb:NM_003802.1	208208_at

	gb:AF111782.2	
ESTs, Weakly similar to I38022 hypothetical protein [H.sapiens]	Consensus includes gb:AW675655 /FEA=EST /DB_XREF=gi:7540890 /DB_XREF=est:ba52e01.x1 /CLONE=IMAGE:2900184 /UG=Hs.314158 ESTs	222354_at
hypothetical protein FLJ20174	gb:NM_017699.1 /DEF=Homo sapiens hypothetical protein FLJ20174 (FLJ20174), mRNA. /FEA=mRNA /GEN=FLJ20174 /PROD=hypothetical protein FLJ20174 /DB_XREF=gi:8923170 /UG=Hs.114556 hypothetical protein FLJ20174 /FL=gb:NM_017699.1	219734_at
PTPRF interacting protein, binding protein 2 (liprin beta 2)	Consensus includes gb:AI692180 /FEA=EST /DB_XREF=gi:4969520 /DB_XREF=est:wd37f06.x1 /CLONE=IMAGE:2330339 /UG=Hs.12953 PTPRF interacting protein, binding protein 2 (liprin beta 2)	212841_s_at
ribonuclease, RNase A family, 1 (pancreatic)	gb:NM_002933.1 /DEF=Homo sapiens ribonuclease, RNase A family, 1 (pancreatic) (RNASE1), mRNA. /FEA=mRNA /GEN=RNASE1 /PROD=ribonuclease, RNase A family, 1 (pancreatic) /DB_XREF=gi:4506546 /UG=Hs.78224 ribonuclease, RNase A family, 1 (pancreatic) /FL=gb:BC005324.1 gb:NM_002933.1 gb:D26129.1	201785_at
hairless (mouse) homolog	gb:NM_018411.1 /DEF=Homo sapiens hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) (HSA277165), mRNA. /FEA=mRNA /GEN=HSA277165 /PROD=hairless protein /DB_XREF=gi:11036651 /UG=Hs.272367 hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) /FL=gb:NM_018411.1	220163_s_at
nuclear receptor subfamily 5, group A, member 2	Consensus includes gb:AF228413.1 /DEF=Homo sapiens hepatocyte transcription factor mRNA, 3UTR. /FEA=mRNA /DB_XREF=gi:7677372 /UG=Hs.183123 nuclear receptor subfamily 5, group A, member 2 /FL=gb:U93553.1 gb:AB019246.1 gb:AF124247.1	210174_at
superoxide dismutase 3, extracellular	gb:NM_003102.1 /DEF=Homo sapiens superoxide dismutase 3, extracellular (SOD3), mRNA. /FEA=mRNA /GEN=SOD3 /PROD=superoxide dismutase 3, extracellular	205236_x_at

	/DB_XREF=gi:4507150 /UG=Hs.2420 superoxide dismutase 3, extracellular /FL=gb:J02947.1 gb:NM_003102.1	
zinc finger protein 137 (clone pHZ-30)	gb:NM_003438.1 /DEF=Homo sapiens zinc finger protein 137 (clone pHZ-30) (ZNF137), mRNA. /FEA=mRNA /GEN=ZNF137 /PROD=zinc finger protein 137 (clone pHZ-30) /DB_XREF=gi:4507988 /UG=Hs.151689 zinc finger protein 137 (clone pHZ-30) /FL=gb:NM_003438.1 gb:U09414.1	207394_at
Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042)	Consensus includes gb:AL049983.1 /DEF=Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042). /FEA=mRNA /DB_XREF=gi:4884234 /UG=Hs.240136 Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042)	217288_at
Hermansky-Pudlak syndrome	Consensus includes gb:AL022313 /DEF=Human DNA sequence from clone RP5-1119A7 on chromosome 22q12.2-12.3 Contains the TXN2 gene for mitochondrial thioredoxin, a novel gene, the EIF3S7 gene for eukaryotic translation initiation factor 3 subunit 7 (zeta, 6667kD) (EIF3-P66), the gene f... /FEA=CDS_3 /DB_XREF=gi:4200326 /UG=Hs.272270 Human DNA sequence from clone RP5-1119A7 on chromosome 22q12.2-12.3 Contains the TXN2 gene for mitochondrial thioredoxin, a novel gene, the EIF3S7 gene for eukaryotic translation initiation factor 3 subunit 7 (zeta, 6667kD) (EIF3-P66), the gene for a nov	217354_s_at
peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase	gb:NM_018441.1 /DEF=Homo sapiens peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase (HSA250303), mRNA. /FEA=mRNA /GEN=HSA250303 /PROD=peroxisomal trans 2-enoyl CoA reductase;putative short chain alcohol dehydrogenase /DB_XREF=gi:8923751 /UG=Hs.281680 peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase /FL=gb:NM_018441.1	221142_s_at
BTG family, member 2	gb:NM_006763.1 /DEF=Homo sapiens BTG family, member 2 (BTG2), mRNA. /FEA=mRNA /GEN=BTG2 /PROD=BTG family, member 2 /DB_XREF=gi:5802987 /UG=Hs.75462 BTG family, member 2 /FL=gb:U72649.1 gb:NM_006763.1	201236_s_at
phosducin	gb:M33478.1 /DEF=Human 33-kDa phototransducing protein mRNA, complete cds.	211496_s_at

	/FEA=mRNA /DB_XREF=gi:177186 /UG=Hs.550 phosducin /FL=gb:NM_022577.1 gb:M33478.1 gb:AF076465.1	
Rho GTPase activating protein 8	gb:NM_015366.1 /DEF=Homo sapiens Rho GTPase activating protein 8 (ARHGAP8), mRNA. /FEA=mRNA /GEN=ARHGAP8 /PROD=Rho GTPase activating protein 8 /DB_XREF=gi:7656903 /UG=Hs.102336 Rho GTPase activating protein 8 /FL=gb:NM_015366.1	205980_s_at
Homo sapiens clone 24707 mRNA sequence	Consensus includes gb:AW593996 /FEA=EST /DB_XREF=gi:7281254 /DB_XREF=est:hg41g06.x1 /CLONE=IMAGE:2948218 /UG=Hs.124969 Homo sapiens clone 24707 mRNA sequence	213256_at
caspase 10, apoptosis-related cysteine protease	gb:NM_001230.1 /DEF=Homo sapiens caspase 10, apoptosis-related cysteine protease (CASP10), mRNA. /FEA=mRNA /GEN=CASP10 /PROD=caspase 10, apoptosis-related cysteine protease /DB_XREF=gi:4502568 /UG=Hs.5353 caspase 10, apoptosis-related cysteine protease /FL=gb:U60519.1 gb:NM_001230.1	205467_at
KIAA0690 protein	Consensus includes gb:AK000238.1 /DEF=Homo sapiens cDNA FLJ20231 fis, clone COLF5511, highly similar to AB014590 Homo sapiens mRNA for KIAA0690 protein. /FEA=mRNA /DB_XREF=gi:7020188 /UG=Hs.60103 KIAA0690 protein	216360_x_at
Homo sapiens, Similar to RIKEN cDNA 1810037C20 gene, clone MGC:21481 IMAGE:3852062, mRNA, complete cds	Consensus includes gb:AW001287 /FEA=EST /DB_XREF=gi:5848203 /DB_XREF=est:wu27e06.x1 /CLONE=IMAGE:2521282 /UG=Hs.61265 ESTs, Weakly similar to G786_HUMAN PROTEIN GS3786 H.sapiens	227676_at
ESTs	Consensus includes gb:AA581439 /FEA=EST /DB_XREF=gi:2359211 /DB_XREF=est:nh13c10.s1 /CLONE=IMAGE:952242 /UG=Hs.152328 ESTs	244650_at
ESTs	Consensus includes gb:AI739241 /FEA=EST /DB_XREF=gi:5101222 /DB_XREF=est:wi14h02.x1 /CLONE=IMAGE:2390259 /UG=Hs.171480 ESTs	238984_at

hypothetical protein FLJ23045	Consensus includes gb:AB046810.1 /DEF=Homo sapiens mRNA for KIAA1590 protein, partial cds. /FEA=mRNA /GEN=KIAA1590 /PROD=KIAA1590 protein /DB_XREF=gi:10047254 /UG=Hs.101774 hypothetical protein FLJ23045	232083_at
regenerating gene type IV	gb:AY007243.1 /DEF=Homo sapiens regenerating gene type IV mRNA, complete cds. /FEA=mRNA /PROD=regenerating gene type IV /DB_XREF=gi:12621025 /UG=Hs.105484 Homo sapiens regenerating gene type IV mRNA, complete cds /FL=gb:AY007243.1	223447_at
ESTs	Consensus includes gb:AI139990 /FEA=EST /DB_XREF=gi:3647447 /DB_XREF=est:qa47d03.x1 /CLONE=IMAGE:1689893 /UG=Hs.134586 ESTs	231022_at
ESTs	Consensus includes gb:AI733801 /FEA=EST /DB_XREF=gi:5054914 /DB_XREF=est:qk39c04.x5 /CLONE=IMAGE:1871334 /UG=Hs.146186 ESTs	237923_at
hypothetical protein MGC20702	Consensus includes gb:AK002203.1 /DEF=Homo sapiens cDNA FLJ11341 fis, clone PLACE1010786. /FEA=mRNA /DB_XREF=gi:7023932 /UG=Hs.10260 Homo sapiens cDNA FLJ11341 fis, clone PLACE1010786	226992_at
ESTs, Weakly similar to ALU1_HUMAN ALU SUBFAMILY J SEQUENCE CONTAMINAT ION WARNING ENTRY [H.sapiens]	Consensus includes gb:AI457984 /FEA=EST /DB_XREF=gi:4312002 /DB_XREF=est:tj66a04.x1 /CLONE=IMAGE:2146446 /UG=Hs.165900 ESTs, Weakly similar to ALUC_HUMAN !!!! ALU CLASS C WARNING ENTRY !!! H.sapiens	243729_at
Homo sapiens cDNA: FLJ22063 fis, clone HEP10326	Consensus includes gb:T86159 /FEA=EST /DB_XREF=gi:714511 /DB_XREF=est:yd84h07.s1 /CLONE=IMAGE:114973 /UG=Hs.10450 Homo sapiens cDNA: FLJ22063 fis, clone HEP10326	227724_at
ESTs	Consensus includes gb:AI806131 /FEA=EST /DB_XREF=gi:5392697 /DB_XREF=est:wf06c06.x1 /CLONE=IMAGE:2349802 /UG=Hs.99376	231148_at

	ESTs	
anterior gradient 2 (Xenepus laevis) homolog	Consensus includes gb:AI922323 /FEA=EST /DB_XREF=gi:5658287 /DB_XREF=est:wn90h03.x1 /CLONE=IMAGE:2453141 /UG=Hs.293380 ESTs	228969_at
ESTs	Consensus includes gb:AI493909 /FEA=EST /DB_XREF=gi:4394912 /DB_XREF=est:qz94e02.x1 /CLONE=IMAGE:2042234 /UG=Hs.6131 ESTs	235562_at
hypothetical protein FLJ22233	Consensus includes gb:AI339568 /FEA=EST /DB_XREF=gi:4076495 /DB_XREF=est:qk67e10.x1 /CLONE=IMAGE:1874058 /UG=Hs.286194 hypothetical protein FLJ22233 /FL=gb:NM_024959.1	222727_s_at
GalNAc alpha-2, 6-sialyltransferase I, long form	Consensus includes gb:Y11339.2 /DEF=Homo sapiens mRNA for GalNAc alpha-2, 6-sialyltransferase I, long form. /FEA=mRNA /PROD=GalNAc alpha-2,6-sialyltransferase I /DB_XREF=gi:7576275 /UG=Hs.105352 GalNAc alpha-2, 6-sialyltransferase I, long form	227725_at
ESTs	Consensus includes gb:AI917390 /FEA=EST /DB_XREF=gi:5637245 /DB_XREF=est:ts79a05.x1 /CLONE=IMAGE:2237456 /UG=Hs.99415 ESTs	240964_at
Homo sapiens cDNA: FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA	Consensus includes gb:AK026404.1 /DEF=Homo sapiens cDNA: FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA. /FEA=mRNA /DB_XREF=gi:10439257 /UG=Hs.271819 Homo sapiens cDNA: FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA	232321_at
Homo sapiens cDNA: FLJ23331 fis, clone HEP12664	Consensus includes gb:AK026984.1 /DEF=Homo sapiens cDNA: FLJ23331 fis, clone HEP12664. /FEA=mRNA /DB_XREF=gi:10439980 /UG=Hs.50742 Homo sapiens cDNA: FLJ23331 fis, clone HEP12664	229021_at
ESTs	Consensus includes gb:AA827649 /FEA=EST /DB_XREF=gi:2900090 /DB_XREF=est:od01a12.s1 /CLONE=IMAGE:1357918 /UG=Hs.105317 ESTs	235515_at
prostate cancer	Consensus includes gb:AA633076 /FEA=EST	226167_at

associated protein 7	/DB_XREF=gi:2556490 /DB_XREF=est:nq38a06.s1 /CLONE=IMAGE:1146130 /UG=Hs.27495 prostate cancer associated protein 7	
ESTs	Consensus includes gb:N37023 /FEA=EST /DB_XREF=gi:1158165 /DB_XREF=est:yy40d03.s1 /CLONE=IMAGE:273701 /UG=Hs.235883 ESTs	225407_at
ESTs, Weakly similar to I38588 reverse transcriptase homolog [H.sapiens]	Consensus includes gb:AI864053 /FEA=EST /DB_XREF=gi:5528160 /DB_XREF=est:wj55h10.x1 /CLONE=IMAGE:2406787 /UG=Hs.39972 ESTs, Weakly similar to I38588 reverse transcriptase homolog H.sapiens	235678_at
ESTs, Weakly similar to JX0331 laurate omega-hydroxylase [H.sapiens]	Consensus includes gb:AA557324 /FEA=EST /DB_XREF=gi:2327801 /DB_XREF=est:nl81a02.s1 /CLONE=IMAGE:1057034 /UG=Hs.26040 ESTs, Weakly similar to fatty acid omega-hydroxylase H.sapiens	227702_at
ESTs	Consensus includes gb:BF594323 /FEA=EST /DB_XREF=gi:11686647 /DB_XREF=est:7h79g07.x1 /CLONE=IMAGE:3322236 /UG=Hs.158989 ESTs	238103_at
ESTs, Weakly similar to JE0350 Anterior gradient-2 [H.sapiens]	Consensus includes gb:AI827789 /FEA=EST /DB_XREF=gi:5448449 /DB_XREF=est:wf33a07.x1 /CLONE=IMAGE:2357364 /UG=Hs.100686 ESTs, Weakly similar to JE0350 Anterior gradient-2 H.sapiens	228241_at
ESTs	Consensus includes gb:AI968097 /FEA=EST /DB_XREF=gi:5764915 /DB_XREF=est:wu13a12.x1 /CLONE=IMAGE:2516830 /UG=Hs.131360 ESTs	237835_at
ESTs	Consensus includes gb:H05025 /FEA=EST /DB_XREF=gi:868577 /DB_XREF=est:yl74g12.s1 /CLONE=IMAGE:43864 /UG=Hs.323767 ESTs	241874_at
Homo sapiens, Similar to RIKEN cDNA 1110060O18 gene, clone MGC:17236 IMAGE:386413	Consensus includes gb:AA524690 /FEA=EST /DB_XREF=gi:2265618 /DB_XREF=est:ng38e07.s1 /CLONE=IMAGE:937092 /UG=Hs.294143 ESTs, Weakly similar to predicted using Genefinder C.elegans	226168_at

7, mRNA, complete cds		
ESTs	Consensus includes gb:AI300126 /FEA=EST /DB_XREF=gi:3959472 /DB_XREF=est:qn54f02.x1 /CLONE=IMAGE:1902075 /UG=Hs.257858 ESTs	240830_at
Homo sapiens cDNA FLJ13137 fis, clone NT2RP3003150	Consensus includes gb:AA129774 /FEA=EST /DB_XREF=gi:1690185 /DB_XREF=est:zl16h09.s1 /CLONE=IMAGE:502145 /UG=Hs.288905 Homo sapiens cDNA FLJ13137 fis, clone NT2RP3003150	227019_at
ESTs	Consensus includes gb:AW024656 /FEA=EST /DB_XREF=gi:5878186 /DB_XREF=est:wu78h05.x1 /CLONE=IMAGE:2526201 /UG=Hs.233382 ESTs, Moderately similar to AF119917 62 PRO2822 H.sapiens	242358_at

The biomarker probe set list B (Table 3) contains 95 probe sets (U133A: 47; U133B 48). The biomarker probe set list B contains polynucleotides identified to be biomarkers of EGFR antagonist sensitivity employing strategy B. In strategy B, polynucleotides were required to satisfy a stringent criteria for correlation to IC_{50} values and a less stringent condition for EGFR status coregulation. Namely, the polynucleotides had to have a Pearsons correlation of -0.5 or less with respect to IC_{50} and be called absent by the Affymetrix software in 5 out of the 6 cell lines with lowest expression of EGFR.

TABLE 3 - Biomarker Probe Set List B

Unigene Title	Affymetrix Description	Affymetrix probe set
dopa decarboxylase (aromatic L-amino acid decarboxylase)	Consensus includes gb:AW772056 /FEA=EST /DB_XREF=gi:7704118 /DB_XREF=est:hn64g06.x1 /CLONE=IMAGE:3032698 /UG=Hs.150403 dopa decarboxylase (aromatic L-amino acid decarboxylase)	214347_s_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette	gb:NM_000492.2 /DEF=Homo sapiens cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) (CFTR), mRNA. /FEA=mRNA /GEN=CFTR /PROD=cystic fibrosis transmembrane	205043_at

(sub-family C, member 7)	conductanceregulator, ATP-binding cassette (sub-family C, member 7) /DB_XREF=gi:6995995 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) /FL=gb:NM_000492.2	
carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen)	gb:BC005008.1 /DEF=Homo sapiens, carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen), clone MGC:10467, mRNA, complete cds. /FEA=mRNA /PROD=carcinoembryonic antigen-related cell adhesionmolecule 6 (non-specific cross reacting antigen) /DB_XREF=gi:13477106 /UG=Hs.73848 carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen) /FL=gb:BC005008.1 gb:M18216.1 gb:M29541.1 gb:NM_002483.1	203757_s_at
hypothetical protein FLJ20075	gb:NM_017655.1 /DEF=Homo sapiens hypothetical protein FLJ20075 (FLJ20075), mRNA. /FEA=mRNA /GEN=FLJ20075 /PROD=hypothetical protein FLJ20075 /DB_XREF=gi:8923083 /UG=Hs.205058 hypothetical protein FLJ20075 /FL=gb:NM_017655.1	219970_at
ATPase, Class V, type 10B	Consensus includes gb:AW006935 /FEA=EST /DB_XREF=gi:5855713 /DB_XREF=est:wt08b11.x1 /CLONE=IMAGE:2506845 /UG=Hs.109358 ATPase, Class V, type 10B	214070_s_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	Consensus includes gb:W60595 /FEA=EST /DB_XREF=gi:1367354 /DB_XREF=est:zc91b04.s1 /CLONE=IMAGE:338479 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	215702_s_at
HERV-H LTR-associating 2	gb:NM_007072.1 /DEF=Homo sapiens HERV-H LTR-associating 2 (HHLA2), mRNA. /FEA=mRNA /GEN=HHLA2 /PROD=HERV-H LTR-associating 2 /DB_XREF=gi:5901963 /UG=Hs.252351 HERV-H LTR-associating 2 /FL=gb:AF126162.1 gb:NM_007072.1	220812_s_at
AA	Consensus includes gb:AV728958 /FEA=EST /DB_XREF=gi:10838379 /DB_XREF=est:AV728958 /CLONE=HTCBYF04 /UG=Hs.150443 KIAA0320 protein	212703_at

hemoglobin, alpha 2	Consensus includes gb:T50399 /FEA=EST /DB_XREF=gi:652259 /DB_XREF=est:yb30b11.s1 /CLONE=IMAGE:72669 /UG=Hs.251577 hemoglobin, alpha 1	214414_x_at
spondin 1, (f-spondin) extracellular matrix protein	Consensus includes gb:AI885290 /FEA=EST /DB_XREF=gi:5590454 /DB_XREF=est:wl92a04.x1 /CLONE=IMAGE:2432334 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein	213993_at
hemoglobin, alpha 1	gb:BC005931.1 /DEF=Homo sapiens, hemoglobin, alpha 2, clone MGC:14541, mRNA, complete cds. /FEA=mRNA /PROD=hemoglobin, alpha 2 /DB_XREF=gi:13543547 /FL=gb:BC005931.1	211745_x_at
serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5	gb:NM_002639.1 /DEF=Homo sapiens serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 (SERPINB5), mRNA. /FEA=mRNA /GEN=SERPINB5 /PROD=serine (or cysteine) proteinase inhibitor, cladeB (ovalbumin), member 5 /DB_XREF=gi:4505788 /UG=Hs.55279 serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 /FL=gb:NM_002639.1 gb:U04313.1	204855_at
3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial)	gb:NM_005518.1 /DEF=Homo sapiens 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) (HMGCS2), mRNA. /FEA=mRNA /GEN=HMGCS2 /PROD=3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2(mitochondrial) /DB_XREF=gi:5031750 /UG=Hs.59889 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) /FL=gb:NM_005518.1	204607_at
anterior gradient 2 (Xenepus laevis) homolog	gb:AF088867.1 /DEF=Homo sapiens putative secreted protein XAG mRNA, complete cds. /FEA=mRNA /PROD=putative secreted protein XAG /DB_XREF=gi:6652811 /UG=Hs.91011 anterior gradient 2 (Xenepus laevis) homolog /FL=gb:AF007791.1 gb:AF038451.1 gb:NM_006408.1 gb:AF088867.1	209173_at
FXYD domain-containing ion transport regulator 3	gb:BC005238.1 /DEF=Homo sapiens, FXYD domain-containing ion transport regulator 3, clone MGC:12265, mRNA, complete cds. /FEA=mRNA /PROD=FXYD domain-containing ion transport regulator3 /DB_XREF=gi:13528881 /UG=Hs.301350 FXYD domain-containing ion transport regulator	202489_s_at

	3 /FL=gb:NM_005971.2 gb:BC005238.1	
dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2)	gb:M80536.1 /DEF=H.sapiens dipeptidyl peptidase IV (DPP4) mRNA, complete cds. /FEA=mRNA /GEN=DPP4 /PROD=dipeptidyl peptidase IV /DB_XREF=gi:181569 /UG=Hs.44926 dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) /FL=gb:M80536.1 gb:NM_001935.1	203716_s_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	Consensus includes gb:W60595 /FEA=EST /DB_XREF=gi:1367354 /DB_XREF=est:zc91b04.s1 /CLONE=IMAGE:338479 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7)	215703_at
EphA1	gb:NM_005232.1 /DEF=Homo sapiens EphA1 (EPHA1), mRNA. /FEA=mRNA /GEN=EPHA1 /PROD=EphA1 /DB_XREF=gi:4885208 /UG=Hs.89839 EphA1 /FL=gb:M18391.1 gb:NM_005232.1	205977_s_at
spondin 1, (f-spondin) extracellular matrix protein	Consensus includes gb:AI885290 /FEA=EST /DB_XREF=gi:5590454 /DB_XREF=est:wl92a04.x1 /CLONE=IMAGE:2432334 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein	213994_s_at
CUG triplet repeat, RNA-binding protein 2	gb:NM_006561.1 /DEF=Homo sapiens CUG triplet repeat, RNA-binding protein 2 (CUGBP2), mRNA. /FEA=mRNA /GEN=CUGBP2 /PROD=CUG triplet repeat, RNA-binding protein 2 /DB_XREF=gi:5729815 /UG=Hs.211610 CUG triplet repeat, RNA-binding protein 2 /FL=gb:U69546.1 gb:AF036956.1 gb:AF090694.1 gb:NM_006561.1	202158_s_at
DKFZP434C091 protein	Consensus includes gb:AL080170.1 /DEF=Homo sapiens mRNA; cDNA DKFZp434C091 (from clone DKFZp434C091); partial cds. /FEA=mRNA /GEN=DKFZp434C091 /PROD=hypothetical protein /DB_XREF=gi:5262639 /UG=Hs.51692 DKFZP434C091 protein	215047_at
mucin 3B	Consensus includes gb:AF113616 /DEF=Homo sapiens intestinal mucin 3 (MUC3) gene, partial cds /FEA=mRNA /DB_XREF=gi:6466800 /UG=Hs.129782 mucin 3A, intestinal	214676_x_at
potassium channel,	gb:U90065.1 /DEF=Human potassium channel KCNO1 mRNA, complete cds. /FEA=mRNA	204678_s_at

subfamily K, member 1 (TWIK-1)	/PROD=potassium channel KCNO1 /DB_XREF=gi:1916294 /UG=Hs.79351 potassium channel, subfamily K, member 1 (TWIK-1) /FL=gb:U33632.1 gb:U90065.1 gb:U76996.1 gb:NM_002245.1	
nuclear receptor subfamily 3, group C, member 2	gb:NM_000901.1 /DEF=Homo sapiens nuclear receptor subfamily 3, group C, member 2 (NR3C2), mRNA. /FEA=mRNA /GEN=NR3C2 /PROD=nuclear receptor subfamily 3, group C, member 2 /DB_XREF=gi:4505198 /UG=Hs.1790 nuclear receptor subfamily 3, group C, member 2 /FL=gb:M16801.1 gb:NM_000901.1	205259_at
BTG family, member 2	gb:NM_006763.1 /DEF=Homo sapiens BTG family, member 2 (BTG2), mRNA. /FEA=mRNA /GEN=BTG2 /PROD=BTG family, member 2 /DB_XREF=gi:5802987 /UG=Hs.75462 BTG family, member 2 /FL=gb:U72649.1 gb:NM_006763.1	201236_s_at
G protein-coupled receptor 49	gb:AF062006.1 /DEF=Homo sapiens orphan G protein-coupled receptor HG38 mRNA, complete cds. /FEA=mRNA /PROD=orphan G protein-coupled receptor HG38 /DB_XREF=gi:3366801 /UG=Hs.285529 G protein-coupled receptor 49 /FL=gb:AF062006.1 gb:AF061444.1 gb:NM_003667.1	210393_at
hypothetical protein FLJ20048	gb:NM_017640.1 /DEF=Homo sapiens hypothetical protein FLJ20048 (FLJ20048), mRNA. /FEA=mRNA /GEN=FLJ20048 /PROD=hypothetical protein FLJ20048 /DB_XREF=gi:8923056 /UG=Hs.116470 hypothetical protein FLJ20048 /FL=gb:NM_017640.1	219573_at
cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2	gb:NM_000775.1 /DEF=Homo sapiens cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 (CYP2J2), mRNA. /FEA=mRNA /GEN=CYP2J2 /PROD=cytochrome P450, subfamily IIJ (arachidonic acidepoxygenase) polypeptide 2 /DB_XREF=gi:4503226 /UG=Hs.152096 cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 /FL=gb:U37143.1 gb:NM_000775.1	205073_at
brain-specific protein p25 alpha	gb:NM_007030.1 /DEF=Homo sapiens brain-specific protein p25 alpha (p25), mRNA. /FEA=mRNA /GEN=p25 /PROD=brain-specific protein p25 alpha /DB_XREF=gi:5902017 /UG=Hs.29353 brain-specific protein p25 alpha	206179_s_at

	/FL=gb:AB017016.1 gb:NM_007030.1	
mucin 2, intestinal/trachea l	gb:NM_002457.1 /DEF=Homo sapiens mucin 2, intestinaltracheal (MUC2), mRNA. /FEA=mRNA /GEN=MUC2 /PROD=mucin 2, intestinaltracheal /DB_XREF=gi:4505284 /UG=Hs.315 mucin 2, intestinaltracheal /FL=gb:NM_002457.1 gb:L21998.1	204673_at
hypothetical protein FLJ20174	gb:NM_017699.1 /DEF=Homo sapiens hypothetical protein FLJ20174 (FLJ20174), mRNA. /FEA=mRNA /GEN=FLJ20174 /PROD=hypothetical protein FLJ20174 /DB_XREF=gi:8923170 /UG=Hs.114556 hypothetical protein FLJ20174 /FL=gb:NM_017699.1	219734_at
metastasis-associated 1-like 1	gb:NM_004739.1 /DEF=Homo sapiens metastasis-associated 1-like 1 (MTA1L1), mRNA. /FEA=mRNA /GEN=MTA1L1 /PROD=metastasis-associated 1-like 1 /DB_XREF=gi:4758739 /UG=Hs.173043 metastasis-associated 1-like 1 /FL=gb:AB016591.1 gb:NM_004739.1 gb:AF295807.1	203444_s_at
bone morphogenetic protein 2	gb:NM_001200.1 /DEF=Homo sapiens bone morphogenetic protein 2 (BMP2), mRNA. /FEA=mRNA /GEN=BMP2 /PROD=bone morphogenetic protein 2 precursor /DB_XREF=gi:4557368 /UG=Hs.73853 bone morphogenetic protein 2 /FL=gb:NM_001200.1	205290_s_at
heparanase	gb:NM_006665.1 /DEF=Homo sapiens heparanase (HPSE), mRNA. /FEA=mRNA /GEN=HPSE /PROD=heparanase /DB_XREF=gi:5729872 /UG=Hs.44227 heparanase /FL=gb:AF165154.1 gb:AF152376.1 gb:NM_006665.1 gb:AF084467.1 gb:AF155510.1	219403_s_at
tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator)	gb:BC002794.1 /DEF=Homo sapiens, tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator), clone MGC:3753, mRNA, complete cds. /FEA=mRNA /PROD=tumor necrosis factor receptor superfamily,member 14 (herpesvirus entry mediator) /DB_XREF=gi:12803894 /UG=Hs.279899 tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator) /FL=gb:BC002794.1 gb:U70321.1 gb:U81232.1 gb:NM_003820.1 gb:AF153978.1	209354_at
CUG triplet repeat, RNA-	Consensus includes gb:N36839 /FEA=EST /DB_XREF=gi:1157981	202156_s_at

binding protein 2	/DB_XREF=est:yy35f07.s1 /CLONE=IMAGE:273253 /UG=Hs.211610 CUG triplet repeat, RNA-binding protein 2 /FL=gb:U69546.1 gb:AF036956.1 gb:AF090694.1 gb:NM_006561.1	
ESTs, Moderately similar to AF078844 1 hqp0376 protein [H.sapiens]	Consensus includes gb:R06655 /FEA=EST /DB_XREF=gi:757275 /DB_XREF=est:yf10e02.r1 /CLONE=IMAGE:126458 /UG=Hs.188518 ESTs, Moderately similar to AF078844 1 hqp0376 protein H.sapiens	217546_at
hairless (mouse) homolog	gb:NM_018411.1 /DEF=Homo sapiens hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) (HSA277165), mRNA. /FEA=mRNA /GEN=HSA277165 /PROD=hairless protein /DB_XREF=gi:11036651 /UG=Hs.272367 hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) /FL=gb:NM_018411.1	220163_s_at
branched chain aminotransferase 1, cytosolic	Consensus includes gb:NM_005504.1 /DEF=Homo sapiens branched chain aminotransferase 1, cytosolic (BCAT1), mRNA. /FEA=CDS /GEN=BCAT1 /PROD=branched chain aminotransferase 1, cytosolic /DB_XREF=gi:5031606 /UG=Hs.157205 branched chain aminotransferase 1, cytosolic /FL=gb:U21551.1 gb:NM_005504.1	214452_at
pancreas-enriched phospholipase C	gb:NM_016341.1 /DEF=Homo sapiens pancreas-enriched phospholipase C (LOC51196), mRNA. /FEA=mRNA /GEN=LOC51196 /PROD=pancreas-enriched phospholipase C /DB_XREF=gi:7705940 /UG=Hs.6733 pancreas-enriched phospholipase C /FL=gb:AF190642.2 gb:AF117948.1 gb:NM_016341.1	205112_at
prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	gb:NM_000963.1 /DEF=Homo sapiens prostaglandin-endoperoxide synthase 2 (prostaglandin GH synthase and cyclooxygenase) (PTGS2), mRNA. /FEA=mRNA /GEN=PTGS2 /PROD=prostaglandin-endoperoxide synthase 2(prostaglandin GH synthase and cyclooxygenase) /DB_XREF=gi:4506264 /UG=Hs.196384 prostaglandin-endoperoxide synthase 2 (prostaglandin GH synthase and	204748_at

	cyclooxygenase) /FL=gb:M90100.1 gb:L15326.1 gb:NM_000963.1	
phosphatase and tensin homolog (mutated in multiple advanced cancers 1)	gb:NM_000314.1 /DEF=Homo sapiens phosphatase and tensin homolog (mutated in multiple advanced cancers 1) (PTEN), mRNA. /FEA=mRNA /GEN=PTEN /PROD=phosphatase and tensin homolog (mutated inmultiple advanced cancers 1) /DB_XREF=gi:4506248 /UG=Hs.10712 phosphatase and tensin homolog (mutated in multiple advanced cancers 1) /FL=gb:U92436.1 gb:U93051.1 gb:U96180.1 gb:NM_000314.1	204054_at
retinoic acid receptor responder (tazarotene induced) 1	Consensus includes gb:AI669229 /FEA=EST /DB_XREF=gi:4834003 /DB_XREF=est:wc13e06.x1 /CLONE=IMAGE:2315074 /UG=Hs.82547 retinoic acid receptor responder (tazarotene induced) 1	221872_at
protease inhibitor 3, skin-derived (SKALP)	gb:NM_002638.1 /DEF=Homo sapiens protease inhibitor 3, skin-derived (SKALP) (PI3), mRNA. /FEA=mRNA /GEN=PI3 /PROD=protease inhibitor 3, skin-derived (SKALP) /DB_XREF=gi:4505786 /UG=Hs.112341 protease inhibitor 3, skin-derived (SKALP) /FL=gb:NM_002638.1	203691_at
zinc finger protein 137 (clone pHZ-30)	gb:NM_003438.1 /DEF=Homo sapiens zinc finger protein 137 (clone pHZ-30) (ZNF137), mRNA. /FEA=mRNA /GEN=ZNF137 /PROD=zinc finger protein 137 (clone pHZ-30) /DB_XREF=gi:4507988 /UG=Hs.151689 zinc finger protein 137 (clone pHZ-30) /FL=gb:NM_003438.1 gb:U09414.1	207394_at
myosin, light polypeptide 5, regulatory	gb:NM_002477.1 /DEF=Homo sapiens myosin, light polypeptide 5, regulatory (MYL5), mRNA. /FEA=mRNA /GEN=MYL5 /PROD=myosin, light polypeptide 5, regulatory /DB_XREF=gi:4505304 /UG=Hs.170482 myosin, light polypeptide 5, regulatory /FL=gb:L03785.1 gb:NM_002477.1	205145_s_at
tumor necrosis factor receptor superfamily, member 6	gb:NM_000043.1 /DEF=Homo sapiens tumor necrosis factor receptor superfamily, member 6 (TNFRSF6), mRNA. /FEA=mRNA /GEN=TNFRSF6 /PROD=apoptosis (APO-1) antigen 1 /DB_XREF=gi:4507582 /UG=Hs.82359 tumor necrosis factor receptor superfamily, member 6 /FL=gb:M67454.1 gb:NM_000043.1	204781_s_at
hypothetical	Consensus includes gb:AI339568 /FEA=EST	222727_s_at

protein FLJ22233	/DB_XREF=gi:4076495 /DB_XREF=est:qk67e10.x1 /CLONE=IMAGE:1874058 /UG=Hs.286194 hypothetical protein FLJ22233 /FL=gb:NM_024959.1	
regenerating gene type IV	gb:AY007243.1 /DEF=Homo sapiens regenerating gene type IV mRNA, complete cds. /FEA=mRNA /PROD=regenerating gene type IV /DB_XREF=gi:12621025 /UG=Hs.105484 Homo sapiens regenerating gene type IV mRNA, complete cds /FL=gb:AY007243.1	223447_at
Homo sapiens cDNA: FLJ21962 fis, clone HEP05564	Consensus includes gb:AK025615.1 /DEF=Homo sapiens cDNA: FLJ21962 fis, clone HEP05564. /FEA=mRNA /DB_XREF=gi:10438186 /UG=Hs.7567 Homo sapiens cDNA: FLJ21962 fis, clone HEP05564	225285_at
phosphoprotein associated with glycosphingolipi d-enriched microdomains	Consensus includes gb:AK000680.1 /DEF=Homo sapiens cDNA FLJ20673 fis, clone KAIA4464. /FEA=mRNA /DB_XREF=gi:7020924 /UG=Hs.266175 phosphoprotein associated with GEMs /FL=gb:AF240634.1 gb:NM_018440.1	225626_at
hypothetical protein FLJ20209	Consensus includes gb:BF111925 /FEA=EST /DB_XREF=gi:10941704 /DB_XREF=est:7l38g05.x1 /CLONE=IMAGE:3523784 /UG=Hs.3685 hypothetical protein FLJ20209	226171_at
Homo sapiens mRNA for KIAA1190 protein, partial cds	Consensus includes gb:AA532640 /FEA=EST /DB_XREF=gi:2276894 /DB_XREF=est:nj17c04.s1 /CLONE=IMAGE:986598 /UG=Hs.206259 Homo sapiens mRNA for KIAA1190 protein, partial cds	226484_at
KIAA1543 protein	Consensus includes gb:AB040976.1 /DEF=Homo sapiens mRNA for KIAA1543 protein, partial cds. /FEA=mRNA /GEN=KIAA1543 /PROD=KIAA1543 protein /DB_XREF=gi:7959352 /UG=Hs.17686 KIAA1543 protein	226494_at
hypothetical protein FLJ23563	Consensus includes gb:AW138767 /FEA=EST /DB_XREF=gi:6143085 /DB_XREF=est:UI-H-BI1-aep-a-12-0-UI.s1 /CLONE=IMAGE:2719799 /UG=Hs.274256 hypothetical protein FLJ23563	227180_at
ESTs	Consensus includes gb:AW264333 /FEA=EST /DB_XREF=gi:6641075 /DB_XREF=est:xq98e01.x1	227320_at

	/CLONE=IMAGE:2758680 /UG=Hs.21835 ESTs	
ESTs	Consensus includes gb:BF589359 /FEA=EST /DB_XREF=gi:11681683 /DB_XREF=est:nab25d01.x1 /CLONE=IMAGE:3266737 /UG=Hs.13256 ESTs	227354_at
Homo sapiens, Similar to RIKEN cDNA 1810037C20 gene, clone MGC:21481 IMAGE:3852062, mRNA, complete cds	Consensus includes gb:AW001287 /FEA=EST /DB_XREF=gi:5848203 /DB_XREF=est:wu27e06.x1 /CLONE=IMAGE:2521282 /UG=Hs.61265 ESTs, Weakly similar to G786_HUMAN PROTEIN GS3786 H.sapiens	227676_at
Homo sapiens cDNA: FLJ22063 fis, clone HEP10326	Consensus includes gb:T86159 /FEA=EST /DB_XREF=gi:714511 /DB_XREF=est:yd84h07.s1 /CLONE=IMAGE:114973 /UG=Hs.10450 Homo sapiens cDNA: FLJ22063 fis, clone HEP10326	227724_at
ESTs	Consensus includes gb:AI700341 /FEA=EST /DB_XREF=gi:4988241 /DB_XREF=est:wd06e10.x1 /CLONE=IMAGE:2327370 /UG=Hs.110406 ESTs	228653_at
ESTs	Consensus includes gb:BG494007 /FEA=EST /DB_XREF=gi:13455521 /DB_XREF=est:602542289F1 /CLONE=IMAGE:4673182 /UG=Hs.203213 ESTs	228716_at
ESTs	Consensus includes gb:AI559300 /FEA=EST /DB_XREF=gi:4509505 /DB_XREF=est:tq43d03.x1 /CLONE=IMAGE:2211557 /UG=Hs.294140 ESTs	229331_at
hypothetical protein	Consensus includes gb:AI830823 /FEA=EST /DB_XREF=gi:5451416 /DB_XREF=est:wj52b06.x1 /CLONE=IMAGE:2406419 /UG=Hs.95549 hypothetical protein	229439_s_at
ESTs	Consensus includes gb:BF431989 /FEA=EST /DB_XREF=gi:11444103 /DB_XREF=est:nab84a05.x1 /CLONE=IMAGE:3274280 /UG=Hs.203213 ESTs	229657_at
ESTs	Consensus includes gb:BF589413 /FEA=EST	229893_at

	/DB_XREF=gi:11681737 /DB_XREF=est:nab26b11.x1 /CLONE=IMAGE:3267020 /UG=Hs.55501 ESTs	
brain-specific protein p25 alpha	Consensus includes gb:BG055052 /FEA=EST /DB_XREF=gi:12512386 /DB_XREF=est:nac94g06.x1 /CLONE=IMAGE:3441995 /UG=Hs.29353 brain-specific protein p25 alpha	230104_s_at
ESTs, Weakly similar to MMHUE4 erythrocyte membrane protein 4.1, parent splice form [H.sapiens]	Consensus includes gb:BF110588 /FEA=EST /DB_XREF=gi:10940278 /DB_XREF=est:7n39e12.x1 /CLONE=IMAGE:3567071 /UG=Hs.150478 ESTs, Weakly similar to KIAA0987 protein H.sapiens	230645_at
ESTs	Consensus includes gb:BF592062 /FEA=EST /DB_XREF=gi:11684386 /DB_XREF=est:7n98h06.x1 /CLONE=IMAGE:3572962 /UG=Hs.233890 ESTs	230760_at
hepatocyte nuclear factor 4, alpha	Consensus includes gb:AI032108 /FEA=EST /DB_XREF=gi:3250320 /DB_XREF=est:ow92d11.x1 /CLONE=IMAGE:1654293 /UG=Hs.54424 hepatocyte nuclear factor 4, alpha	230914_at
ESTs	Consensus includes gb:AW203959 /FEA=EST /DB_XREF=gi:6503431 /DB_XREF=est:UI-H-BI1-aeu-b-12-0-UI.s1 /CLONE=IMAGE:2720590 /UG=Hs.149532 ESTs	230944_at
ESTs	Consensus includes gb:AI139990 /FEA=EST /DB_XREF=gi:3647447 /DB_XREF=est:qa47d03.x1 /CLONE=IMAGE:1689893 /UG=Hs.134586 ESTs	231022_at
ESTs	Consensus includes gb:AI806131 /FEA=EST /DB_XREF=gi:5392697 /DB_XREF=est:wf06c06.x1 /CLONE=IMAGE:2349802 /UG=Hs.99376 ESTs	231148_at
hypothetical protein FLJ23045	Consensus includes gb:AB046810.1 /DEF=Homo sapiens mRNA for KIAA1590 protein, partial cds. /FEA=mRNA /GEN=KIAA1590 /PROD=KIAA1590 protein /DB_XREF=gi:10047254 /UG=Hs.101774 hypothetical protein FLJ23045	232083_at

Homo sapiens PAC clone RP5-855D21	Consensus includes gb:AC004908 /DEF=Homo sapiens PAC clone RP5-855D21 /FEA=CDS_3 /DB_XREF=gi:4156179 /UG=Hs.249181 Homo sapiens PAC clone RP5-855D21	232641_at
putative microtubule-binding protein	Consensus includes gb:AJ251708.1 /DEF=Homo sapiens partial mRNA for putative microtubule-binding protein. /FEA=mRNA /PROD=putative microtubule-binding protein /DB_XREF=gi:6491740 /UG=Hs.326544 putative microtubule-binding protein	234669_x_at
ESTs	Consensus includes gb:AI741469 /FEA=EST /DB_XREF=gi:5109757 /DB_XREF=est:wg11b01.x1 /CLONE=IMAGE:2364745 /UG=Hs.57787 ESTs	234970_at
ESTs	Consensus includes gb:AI417897 /FEA=EST /DB_XREF=gi:4261401 /DB_XREF=est:tg55b06.x1 /CLONE=IMAGE:2112659 /UG=Hs.235860 ESTs	235444_at
ESTs	Consensus includes gb:AI493909 /FEA=EST /DB_XREF=gi:4394912 /DB_XREF=est:qz94e02.x1 /CLONE=IMAGE:2042234 /UG=Hs.6131 ESTs	235562_at
ESTs	Consensus includes gb:AV741130 /FEA=EST /DB_XREF=gi:10858711 /DB_XREF=est:AV741130 /CLONE=CBCATB06 /UG=Hs.173704 ESTs, Moderately similar to ALU8_HUMAN ALU SUBFAMILY SX SEQUENCE CONTAMINATION WARNING ENTRY H.sapiens	235651_at
ESTs	Consensus includes gb:AW339510 /FEA=EST /DB_XREF=gi:6836136 /DB_XREF=est:xz91h08.x1 /CLONE=IMAGE:2871615 /UG=Hs.42722 ESTs	235866_at
ESTs	Consensus includes gb:AI076192 /FEA=EST /DB_XREF=gi:3405370 /DB_XREF=est:oz01g07.x1 /CLONE=IMAGE:1674108 /UG=Hs.131933 ESTs	236422_at
ESTs	Consensus includes gb:AL044570 /FEA=EST /DB_XREF=gi:5432785 /DB_XREF=est:DKFZp434L082_s1 /CLONE=DKFZp434L082 /UG=Hs.147975 ESTs	236548_at

ESTs	Consensus includes gb:AI733801 /FEA=EST /DB_XREF=gi:5054914 /DB_XREF=est:qk39c04.x5 /CLONE=IMAGE:1871334 /UG=Hs.146186 ESTs	237923_at
Homo sapiens, clone MGC:16402 IMAGE:3940360, mRNA, complete cds	Consensus includes gb:T69015 /FEA=EST /DB_XREF=gi:680163 /DB_XREF=est:yc31f04.s1 /CLONE=IMAGE:82303 /UG=Hs.192728 ESTs	238422_at
ESTs	Consensus includes gb:AA502384 /FEA=EST /DB_XREF=gi:2237351 /DB_XREF=est:ne27f11.s1 /CLONE=IMAGE:898605 /UG=Hs.151529 ESTs	238956_at
ESTs	Consensus includes gb:AI739241 /FEA=EST /DB_XREF=gi:5101222 /DB_XREF=est:wi14h02.x1 /CLONE=IMAGE:2390259 /UG=Hs.171480 ESTs	238984_at
ESTs	Consensus includes gb:AA088446 /FEA=EST /DB_XREF=gi:1633958 /DB_XREF=est:zl89f04.s1 /CLONE=IMAGE:511807 /UG=Hs.170298 ESTs	239065_at
ESTs	Consensus includes gb:AI493046 /FEA=EST /DB_XREF=gi:4394049 /DB_XREF=est:qz49b04.x1 /CLONE=IMAGE:2030191 /UG=Hs.146133 ESTs	239148_at
ESTs	Consensus includes gb:AI243098 /FEA=EST /DB_XREF=gi:3838495 /DB_XREF=est:qh26e03.x1 /CLONE=IMAGE:1845820 /UG=Hs.178398 ESTs	239966_at
ESTs, Weakly similar to A49175 Motch B protein - mouse [M.musculus]	Consensus includes gb:AI633523 /FEA=EST /DB_XREF=gi:4684853 /DB_XREF=est:th68b11.x1 /CLONE=IMAGE:2123805 /UG=Hs.44705 ESTs	240106_at
betacellulin	Consensus includes gb:AI620677 /FEA=EST /DB_XREF=gi:4629803 /DB_XREF=est:tu85e09.x1 /CLONE=IMAGE:2257864 /UG=Hs.154191 ESTs	241412_at
ESTs	Consensus includes gb:BF696216 /FEA=EST /DB_XREF=gi:11981624	242626_at

	/DB_XREF=est:602124536F1 /CLONE=IMAGE:4281632 /UG=Hs.188724 ESTs	
ESTs	Consensus includes gb:N57929 /FEA=EST /DB_XREF=gi:1201819 /DB_XREF=est:yv61e06.s1 /CLONE=IMAGE:247234 /UG=Hs.48100 ESTs	242978_x_at
ESTs, Weakly similar to ALU1_HUMAN ALU SUBFAMILY J SEQUENCE CONTAMINAT ION WARNING ENTRY [H.sapiens]	Consensus includes gb:AI457984 /FEA=EST /DB_XREF=gi:4312002 /DB_XREF=est:tj66a04.x1 /CLONE=IMAGE:2146446 /UG=Hs.165900 ESTs, Weakly similar to ALUC_HUMAN !!!! ALU CLASS C WARNING ENTRY !!! H.sapiens	243729_at
ESTs	Consensus includes gb:AA581439 /FEA=EST /DB_XREF=gi:2359211 /DB_XREF=est:nh13c10.s1 /CLONE=IMAGE:952242 /UG=Hs.152328 ESTs	244650_at

The two biomarker probe sets A and B were then combined, a total of 161 different probe sets, and the redundant polynucleotides were removed, representing 125 unique polynucleotides which are provided below in Table 4. The Table 4 polynucleotides are biomarkers of the invention.

TABLE 4 - Biomarkers

Unigene Title And SEQ ID NO:	Affymetrix Description	Affymetrix probe set
3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) SEQ ID NOS: 1 (DNA) and 126 (amino acid)	gb:NM_005518.1 /DEF=Homo sapiens 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) (HMGCS2), mRNA. /FEA=mRNA /GEN=HMGCS2 /PROD=3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2(mitochondrial) /DB_XREF=gi:5031750 /UG=Hs.59889 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2 (mitochondrial) /FL=gb:NM_005518.1	204607_at
ATPase, Class V, type 10B	Consensus includes gb:AW006935 /FEA=EST /DB_XREF=gi:5855713 /DB_XREF=est:wt08b11.x1	214070_s_at

SEQ ID NO: 2 (DNA)	/CLONE=IMAGE:2506845 /UG=Hs.109358 ATPase, Class V, type 10B	
bone morphogenetic protein 2 SEQ ID NOS: 3 (DNA) and 127 (amino acid)	gb:NM_001200.1 /DEF=Homo sapiens bone morphogenetic protein 2 (BMP2), mRNA. /FEA=mRNA /GEN=BMP2 /PROD=bone morphogenetic protein 2 precursor /DB_XREF=gi:4557368 /UG=Hs.73853 bone morphogenetic protein 2 /FL=gb:NM_001200.1	205290_s_at
brain-specific protein p25 alpha SEQ ID NOS: 4 (DNA) and 128 (amino acid)	gb:NM_007030.1 /DEF=Homo sapiens brain-specific protein p25 alpha (p25), mRNA. /FEA=mRNA /GEN=p25 /PROD=brain-specific protein p25 alpha /DB_XREF=gi:5902017 /UG=Hs.29353 brain-specific protein p25 alpha /FL=gb:AB017016.1 gb:NM_007030.1	206179_s_at
branched chain aminotransferase 1, cytosolic SEQ ID NOS: 5 (DNA) and 129 (amino acid)	Consensus includes gb:NM_005504.1 /DEF=Homo sapiens branched chain aminotransferase 1, cytosolic (BCAT1), mRNA. /FEA=CDS /GEN=BCAT1 /PROD=branched chain aminotransferase 1, cytosolic /DB_XREF=gi:5031606 /UG=Hs.157205 branched chain aminotransferase 1, cytosolic /FL=gb:U21551.1 gb:NM_005504.1	214452_at
BTG family, member 2 SEQ ID NOS: 6 (DNA) and 130 (amino acid)	gb:NM_006763.1 /DEF=Homo sapiens BTG family, member 2 (BTG2), mRNA. /FEA=mRNA /GEN=BTG2 /PROD=BTG family, member 2 /DB_XREF=gi:5802987 /UG=Hs.75462 BTG family, member 2 /FL=gb:U72649.1 gb:NM_006763.1	201236_s_at
Carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen) SEQ ID NOS: 7 (DNA) and 131 (amino acid)	gb:BC005008.1 /DEF=Homo sapiens, carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen), clone MGC:10467, mRNA, complete cds. /FEA=mRNA /PROD=carcinoembryonic antigen-related cell adhesionmolecule 6 (non-specific cross reacting antigen) /DB_XREF=gi:13477106 /UG=Hs.73848 carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen) /FL=gb:BC005008.1 gb:M18216.1 gb:M29541.1 gb:NM_002483.1	203757_s_at
caspase 10, apoptosis-related cysteine protease SEQ ID NOS: 8	gb:NM_001230.1 /DEF=Homo sapiens caspase 10, apoptosis-related cysteine protease (CASP10), mRNA. /FEA=mRNA /GEN=CASP10 /PROD=caspase 10, apoptosis-related cysteine protease	205467_at

(DNA) and 132 (amino acid)	/DB_XREF=gi:4502568 /UG=Hs.5353 caspase 10, apoptosis-related cysteine protease /FL=gb:U60519.1 gb:NM_001230.1	
CUG triplet repeat, RNA-binding protein 2 SEQ ID NOS: 9 (DNA) and 133 (amino acid)	gb:NM_006561.1 /DEF=Homo sapiens CUG triplet repeat, RNA-binding protein 2 (CUGBP2), mRNA. /FEA=mRNA /GEN=CUGBP2 /PROD=CUG triplet repeat, RNA-binding protein 2 /DB_XREF=gi:5729815 /UG=Hs.211610 CUG triplet repeat, RNA-binding protein 2 /FL=gb:U69546.1 gb:AF036956.1 gb:AF090694.1 gb:NM_006561.1	202158_s_at
cystatin S SEQ ID NOS: 10 (DNA) and 134 (amino acid)	gb:NM_001899.1 /DEF=Homo sapiens cystatin S (CST4), mRNA. /FEA=mRNA /GEN=CST4 /PROD=cystatin S /DB_XREF=gi:4503108 /UG=Hs.56319 cystatin S /FL=gb:NM_001899.1	206994_at
cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) SEQ ID NOS: 11 (DNA) and 135 (amino acid)	gb:NM_000492.2 /DEF=Homo sapiens cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) (CFTR), mRNA. /FEA=mRNA /GEN=CFTR /PROD=cystic fibrosis transmembrane conductanceregulator, ATP-binding cassette (sub-family C, member 7) /DB_XREF=gi:6995995 /UG=Hs.663 cystic fibrosis transmembrane conductance regulator, ATP-binding cassette (sub-family C, member 7) /FL=gb:NM_000492.2	205043_at
cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 SEQ ID NOS: 12 (DNA) and 136 (amino acid)	gb:NM_000775.1 /DEF=Homo sapiens cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 (CYP2J2), mRNA. /FEA=mRNA /GEN=CYP2J2 /PROD=cytochrome P450, subfamily IIJ (arachidonic acidepoxygenase) polypeptide 2 /DB_XREF=gi:4503226 /UG=Hs.152096 cytochrome P450, subfamily IIJ (arachidonic acid epoxygenase) polypeptide 2 /FL=gb:U37143.1 gb:NM_000775.1	205073_at
dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) SEQ ID NOS 13 (DNA) and 137 (amino acid)	gb:M80536.1 /DEF=H.sapiens dipeptidyl peptidase IV (DPP4) mRNA, complete cds. /FEA=mRNA /GEN=DPP4 /PROD=dipeptidyl peptidase IV /DB_XREF=gi:181569 /UG=Hs.44926 dipeptidylpeptidase IV (CD26, adenosine deaminase complexing protein 2) /FL=gb:M80536.1 gb:NM_001935.1	203716_s_at
DKFZP434C091 protein	Consensus includes gb:AL080170.1 /DEF=Homo sapiens mRNA; cDNA	215047_at

SEQ ID NO: 14 (DNA)	DKFZp434C091 (from clone DKFZp434C091); partial cds. /FEA=mRNA /GEN=DKFZp434C091 /PROD=hypothetical protein /DB_XREF=gi:5262639 /UG=Hs.51692 DKFZP434C091 protein	
dopa decarboxylase (aromatic L-amino acid decarboxylase) SEQ ID NO: 15 (DNA)	Consensus includes gb:AW772056 /FEA=EST /DB_XREF=gi:7704118 /DB_XREF=est:hn64g06.x1 /CLONE=IMAGE:3032698 /UG=Hs.150403 dopa decarboxylase (aromatic L-amino acid decarboxylase)	214347_s_at
EphA1 SEQ ID NOS: 16 (DNA) and 138 (amino acid)	gb:NM_005232.1 /DEF=Homo sapiens EphA1 (EPHA1), mRNA. /FEA=mRNA /GEN=EPHA1 /PROD=EphA1 /DB_XREF=gi:4885208 /UG=Hs.89839 EphA1 /FL=gb:M18391.1 gb:NM_005232.1	205977_s_at
ESTs, Moderately similar to AF078844 1 hqp0376 protein [H.sapiens] SEQ ID NO: 17 (DNA)	Consensus includes gb:R06655 /FEA=EST /DB_XREF=gi:757275 /DB_XREF=est:yf10e02.r1 /CLONE=IMAGE:126458 /UG=Hs.188518 ESTs, Moderately similar to AF078844 1 hqp0376 protein H.sapiens	217546_at
ESTs, Weakly similar to I38022 hypothetical protein [H.sapiens] SEQ ID NO: 18 (DNA)	Consensus includes gb:AW675655 /FEA=EST /DB_XREF=gi:7540890 /DB_XREF=est:ba52e01.x1 /CLONE=IMAGE:2900184 /UG=Hs.314158 ESTs	222354_at
fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome) SEQ ID NOS: 19 (DNA) and 139 (amino acid)	gb:NM_022969.1 /DEF=Homo sapiens fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome) (FGFR2), transcript variant 2, mRNA. /FEA=mRNA /GEN=FGFR2 /PROD=fibroblast growth factor receptor 2, isoform 2precursor /DB_XREF=gi:13186252 /UG=Hs.278581 fibroblast growth factor receptor 2 (bacteria-expressed kinase, keratinocyte growth factor receptor, craniofacial dysostosis 1, Crouzon syndrome, Pfeiffer syndrome, Jackson-Weiss syndrome) /FL=gb:NM_022969.1 gb:M97193.1 gb:M80634.1	203638_s_at
FXYD domain-containing ion	gb:BC005238.1 /DEF=Homo sapiens, FXYD domain-containing ion transport regulator 3,	202489_s_at

transport regulator 3 SEQ ID NOS: 20 (DNA) and 140 (amino acid)	clone MGC:12265, mRNA, complete cds. /FEA=mRNA /PROD=FXYD domain-containing ion transport regulator3 /DB_XREF=gi:13528881 /UG=Hs.301350 FXYD domain-containing ion transport regulator 3 /FL=gb:NM_005971.2 gb:BC005238.1	
G protein-coupled receptor 49 SEQ ID NOS: 21 (DNA) and 141 (amino acid)	gb:AF062006.1 /DEF=Homo sapiens orphan G protein-coupled receptor HG38 mRNA, complete cds. /FEA=mRNA /PROD=orphan G protein-coupled receptor HG38 /DB_XREF=gi:3366801 /UG=Hs.285529 G protein-coupled receptor 49 /FL=gb:AF062006.1 gb:AF061444.1 gb:NM_003667.1	210393_at
hairless (mouse) homolog SEQ ID NOS: 22 (DNA) and 142 (amino acid)	gb:NM_018411.1 /DEF=Homo sapiens hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) (HSA277165), mRNA. /FEA=mRNA /GEN=HSA277165 /PROD=hairless protein /DB_XREF=gi:11036651 /UG=Hs.272367 hairless protein (putative single zinc finger transcription factor protein, responsible for autosomal recessive universal congenital alopecia, HR gene) /FL=gb:NM_018411.1	220163_s_at
hemoglobin, alpha 1 SEQ ID NOS: 23 (DNA) and 143 (amino acid)	gb:BC005931.1 /DEF=Homo sapiens, hemoglobin, alpha 2, clone MGC:14541, mRNA, complete cds. /FEA=mRNA /PROD=hemoglobin, alpha 2 /DB_XREF=gi:13543547 /FL=gb:BC005931.1	211745_x_at
hemoglobin, alpha 2 SEQ ID NO: 24 (DNA)	Consensus includes gb:T50399 /FEA=EST /DB_XREF=gi:652259 /DB_XREF=est:yb30b11.s1 /CLONE=IMAGE:72669 /UG=Hs.251577 hemoglobin, alpha 1	214414_x_at
heparanase SEQ ID NOS: 25 (DNA) and 144 (amino acid)	gb:NM_006665.1 /DEF=Homo sapiens heparanase (HPSE), mRNA. /FEA=mRNA /GEN=HPSE /PROD=heparanase /DB_XREF=gi:5729872 /UG=Hs.44227 heparanase /FL=gb:AF165154.1 gb:AF152376.1 gb:NM_006665.1 gb:AF084467.1 gb:AF155510.1	219403_s_at
Hermansky-Pudlak syndrome	Consensus includes gb:AL022313 /DEF=Human DNA sequence from clone RP5-1119A7 on chromosome 22q12.2-12.3	217354_s_at

SEQ ID NOS: 26 (DNA) and 145 (amino acid)	Contains the TXN2 gene for mitochondrial thioredoxin, a novel gene, the EIF3S7 gene for eukaryotic translation initiation factor 3 subunit 7 (zeta, 6667kD) (EIF3-P66), the gene f... /FEA=CDS_3 /DB_XREF=gi:4200326 /UG=Hs.272270 Human DNA sequence from clone RP5-1119A7 on chromosome 22q12.2-12.3 Contains the TXN2 gene for mitochondrial thioredoxin, a novel gene, the EIF3S7 gene for eukaryotic translation initiation factor 3 subunit 7 (zeta, 6667kD) (EIF3-P66), the gene for a nov	
HERV-H LTR-associating 2 SEQ ID NOS: 27 (DNA) and 146 (amino acid)	gb:NM_007072.1 /DEF=Homo sapiens HERV-H LTR-associating 2 (HHLA2), mRNA. /FEA=mRNA /GEN=HHLA2 /PROD=HERV-H LTR-associating 2 /DB_XREF=gi:5901963 /UG=Hs.252351 HERV-H LTR-associating 2 /FL=gb:AF126162.1 gb:NM_007072.1	220812_s_at
Homo sapiens clone 24707 mRNA sequence SEQ ID NO: 28 (DNA)	Consensus includes gb:AW593996 /FEA=EST /DB_XREF=gi:7281254 /DB_XREF=est:hg41g06.x1 /CLONE=IMAGE:2948218 /UG=Hs.124969 Homo sapiens clone 24707 mRNA sequence	213256_at
Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042) SEQ ID NO: 29 (DNA)	Consensus includes gb:AL049983.1 /DEF=Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042). /FEA=mRNA /DB_XREF=gi:4884234 /UG=Hs.240136 Homo sapiens mRNA; cDNA DKFZp564D042 (from clone DKFZp564D042)	217288_at
hypothetical protein FLJ20048 SEQ ID NOS: 30 (DNA) and 147 (amino acid)	gb:NM_017640.1 /DEF=Homo sapiens hypothetical protein FLJ20048 (FLJ20048), mRNA. /FEA=mRNA /GEN=FLJ20048 /PROD=hypothetical protein FLJ20048 /DB_XREF=gi:8923056 /UG=Hs.116470 hypothetical protein FLJ20048 /FL=gb:NM_017640.1	219573_at
hypothetical protein FLJ20075 SEQ ID NOS: 31 (DNA) and 148 (amino acid)	gb:NM_017655.1 /DEF=Homo sapiens hypothetical protein FLJ20075 (FLJ20075), mRNA. /FEA=mRNA /GEN=FLJ20075 /PROD=hypothetical protein FLJ20075 /DB_XREF=gi:8923083 /UG=Hs.205058 hypothetical protein FLJ20075 /FL=gb:NM_017655.1	219970_at

interferon consensus sequence binding protein 1 SEQ ID NO: 32 (DNA)	Consensus includes gb:AI073984 /FEA=EST /DB_XREF=gi:3400628 /DB_XREF=est:oy66c05.x1 /CLONE=IMAGE:1670792 /UG=Hs.14453 interferon consensus sequence binding protein 1 /FL=gb:M91196.1 gb:NM_002163.1	204057_at
KIAA0690 protein SEQ ID NO: 33 (DNA)	Consensus includes gb:AK000238.1 /DEF=Homo sapiens cDNA FLJ20231 fis, clone COLF5511, highly similar to AB014590 Homo sapiens mRNA for KIAA0690 protein. /FEA=mRNA /DB_XREF=gi:7020188 /UG=Hs.60103 KIAA0690 protein	216360_x_at
matrilin 3 SEQ ID NOS: 34 (DNA) and 149 (amino acid)	gb:NM_002381.2 /DEF=Homo sapiens matrilin 3 (MATN3) precursor, mRNA. /FEA=mRNA /GEN=MATN3 /PROD=matrilin 3 precursor /DB_XREF=gi:13518040 /UG=Hs.278461 matrilin 3 /FL=gb:NM_002381.2	206091_at
metastasis-associated 1-like 1 SEQ ID NOS: 35 (DNA) and 150 (amino acid)	gb:NM_004739.1 /DEF=Homo sapiens metastasis-associated 1-like 1 (MTA1L1), mRNA. /FEA=mRNA /GEN=MTA1L1 /PROD=metastasis-associated 1-like 1 /DB_XREF=gi:4758739 /UG=Hs.173043 metastasis-associated 1-like 1 /FL=gb:AB016591.1 gb:NM_004739.1 gb:AF295807.1	203444_s_at
mucin 2, intestinal/tracheal SEQ ID NOS: 36 (DNA) and 151 (amino acid)	gb:NM_002457.1 /DEF=Homo sapiens mucin 2, intestinaltracheal (MUC2), mRNA. /FEA=mRNA /GEN=MUC2 /PROD=mucin 2, intestinaltracheal /DB_XREF=gi:4505284 /UG=Hs.315 mucin 2, intestinaltracheal /FL=gb:NM_002457.1 gb:L21998.1	204673_at
mucin 3B SEQ ID NOS: 37 (DNA) and 152 (amino acid)	Consensus includes gb:AB038783.1 /DEF=Homo sapiens MUC3B mRNA for intestinal mucin, partial cds. /FEA=mRNA /GEN=MUC3B /PROD=intestinal mucin /DB_XREF=gi:9929917 /UG=Hs.129782 mucin 3A, intestinal	214898_x_at
myosin, heavy polypeptide 13, skeletal muscle SEQ ID NOS: 38 (DNA) and 153 (amino acid)	gb:NM_003802.1 /DEF=Homo sapiens myosin, heavy polypeptide 13, skeletal muscle (MYH13), mRNA. /FEA=mRNA /GEN=MYH13 /PROD=myosin, heavy polypeptide 13, skeletal muscle /DB_XREF=gi:11321578 /UG=Hs.278488 myosin, heavy polypeptide 13, skeletal muscle /FL=gb:NM_003802.1 gb:AF111782.2	208208_at

myosin, light polypeptide 5, regulatory SEQ ID NOS: 39 (DNA) and 154 (amino acid)	gb:NM_002477.1 /DEF=Homo sapiens myosin, light polypeptide 5, regulatory (MYL5), mRNA. /FEA=mRNA /GEN=MYL5 /PROD=myosin, light polypeptide 5, regulatory /DB_XREF=gi:4505304 /UG=Hs.170482 myosin, light polypeptide 5, regulatory /FL=gb:L03785.1 gb:NM_002477.1	205145_s_at
nuclear receptor subfamily 3, group C, member 2 SEQ ID NOS: 40 (DNA) and 155 (amino acid)	gb:NM_000901.1 /DEF=Homo sapiens nuclear receptor subfamily 3, group C, member 2 (NR3C2), mRNA. /FEA=mRNA /GEN=NR3C2 /PROD=nuclear receptor subfamily 3, group C, member 2 /DB_XREF=gi:4505198 /UG=Hs.1790 nuclear receptor subfamily 3, group C, member 2 /FL=gb:M16801.1 gb:NM_000901.1	205259_at
nuclear receptor subfamily 5, group A, member 2 SEQ ID NOS: 41 (DNA) and 156 (amino acid)	Consensus includes gb:AF228413.1 /DEF=Homo sapiens hepatocyte transcription factor mRNA, 3UTR. /FEA=mRNA /DB_XREF=gi:7677372 /UG=Hs.183123 nuclear receptor subfamily 5, group A, member 2 /FL=gb:U93553.1 gb:AB019246.1 gb:AF124247.1	210174_at
pancreas-enriched phospholipase C SEQ ID NOS: 42 (DNA) and 157 (amino acid)	gb:NM_016341.1 /DEF=Homo sapiens pancreas-enriched phospholipase C (LOC51196), mRNA. /FEA=mRNA /GEN=LOC51196 /PROD=pancreas-enriched phospholipase C /DB_XREF=gi:7705940 /UG=Hs.6733 pancreas-enriched phospholipase C /FL=gb:AF190642.2 gb:AF117948.1 gb:NM_016341.1	205112_at
peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase SEQ ID NOS: 43 (DNA) and 158 (amino acid)	gb:NM_018441.1 /DEF=Homo sapiens peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase (HSA250303), mRNA. /FEA=mRNA /GEN=HSA250303 /PROD=peroxisomal trans 2-enoyl CoA reductase;putative short chain alcohol dehydrogenase /DB_XREF=gi:8923751 /UG=Hs.281680 peroxisomal trans 2-enoyl CoA reductase; putative short chain alcohol dehydrogenase /FL=gb:NM_018441.1	221142_s_at
phosducin SEQ ID NOS: 44 (DNA) and 159 (amino acid)	gb:M33478.1 /DEF=Human 33-kDa phototransducing protein mRNA, complete cds. /FEA=mRNA /DB_XREF=gi:177186 /UG=Hs.550 phosducin /FL=gb:NM_022577.1 gb:M33478.1	211496_s_at

	gb:AF076465.1	
phosphatase and tensin homolog (mutated in multiple advanced cancers 1) SEQ ID NOS: 45 (DNA) and 160 (amino acid)	gb:NM_000314.1 /DEF=Homo sapiens phosphatase and tensin homolog (mutated in multiple advanced cancers 1) (PTEN), mRNA. /FEA=mRNA /GEN=PTEN /PROD=phosphatase and tensin homolog (mutated inmultiple advanced cancers 1) /DB_XREF=gi:4506248 /UG=Hs.10712 phosphatase and tensin homolog (mutated in multiple advanced cancers 1) /FL=gb:U92436.1 gb:U93051.1 gb:U96180.1 gb:NM_000314.1	204054_at
potassium channel, subfamily K, member 1 (TWIK-1) SEQ ID NOS: 46 (DNA) and 161 (amino acid)	gb:U90065.1 /DEF=Human potassium channel KCNO1 mRNA, complete cds. /FEA=mRNA /PROD=potassium channel KCNO1 /DB_XREF=gi:1916294 /UG=Hs.79351 potassium channel, subfamily K, member 1 (TWIK-1) /FL=gb:U33632.1 gb:U90065.1 gb:U76996.1 gb:NM_002245.1	204678_s_at
prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase) SEQ ID NOS: 47 (DNA) and 162 (amino acid)	gb:NM_000963.1 /DEF=Homo sapiens prostaglandin-endoperoxide synthase 2 (prostaglandin GH synthase and cyclooxygenase) (PTGS2), mRNA. /FEA=mRNA /GEN=PTGS2 /PROD=prostaglandin-endoperoxide synthase 2(prostaglandin GH synthase and cyclooxygenase) /DB_XREF=gi:4506264 /UG=Hs.196384 prostaglandin-endoperoxide synthase 2 (prostaglandin GH synthase and cyclooxygenase) /FL=gb:M90100.1 gb:L15326.1 gb:NM_000963.1	204748_at
protease inhibitor 3, skin-derived (SKALP) SEQ ID NOS: 48 (DNA) and 163 (amino acid)	gb:NM_002638.1 /DEF=Homo sapiens protease inhibitor 3, skin-derived (SKALP) (PI3), mRNA. /FEA=mRNA /GEN=PI3 /PROD=protease inhibitor 3, skin-derived (SKALP) /DB_XREF=gi:4505786 /UG=Hs.112341 protease inhibitor 3, skin-derived (SKALP) /FL=gb:NM_002638.1	203691_at
PTPRF interacting protein, binding protein 2 (liprin beta 2) SEQ ID NO: 49 (DNA)	Consensus includes gb:AI692180 /FEA=EST /DB_XREF=gi:4969520 /DB_XREF=est:wd37f06.x1 /CLONE=IMAGE:2330339 /UG=Hs.12953 PTPRF interacting protein, binding protein 2 (liprin beta 2)	212841_s_at
retinoic acid receptor responder (tazarotene induced) 1	Consensus includes gb:AI669229 /FEA=EST /DB_XREF=gi:4834003 /DB_XREF=est:wc13e06.x1	221872_at

SEQ ID NO: 50 (DNA)	/CLONE=IMAGE:2315074 /UG=Hs.82547 retinoic acid receptor responder (tazarotene induced) 1	
Rho GTPase activating protein 8 SEQ ID NOS: 51 (DNA) and 164 (amino acid)	gb:NM_015366.1 /DEF=Homo sapiens Rho GTPase activating protein 8 (ARHGAP8), mRNA. /FEA=mRNA /GEN=ARHGAP8 /PROD=Rho GTPase activating protein 8 /DB_XREF=gi:7656903 /UG=Hs.102336 Rho GTPase activating protein 8 /FL=gb:NM_015366.1	205980_s_at
ribonuclease, RNase A family, 1 (pancreatic) SEQ ID NOS: 52 (DNA) and 165 (amino acid)	gb:NM_002933.1 /DEF=Homo sapiens ribonuclease, RNase A family, 1 (pancreatic) (RNASE1), mRNA. /FEA=mRNA /GEN=RNASE1 /PROD=ribonuclease, RNase A family, 1 (pancreatic) /DB_XREF=gi:4506546 /UG=Hs.78224 ribonuclease, RNase A family, 1 (pancreatic) /FL=gb:BC005324.1 gb:NM_002933.1 gb:D26129.1	201785_at
serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 SEQ ID NOS: 53 (DNA) and 166 (amino acid)	gb:NM_002639.1 /DEF=Homo sapiens serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 (SERPINB5), mRNA. /FEA=mRNA /GEN=SERPINB5 /PROD=serine (or cysteine) proteinase inhibitor, cladeB (ovalbumin), member 5 /DB_XREF=gi:4505788 /UG=Hs.55279 serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 /FL=gb:NM_002639.1 gb:U04313.1	204855_at
spondin 1, (f-spondin) extracellular matrix protein SEQ ID NO: 54 (DNA)	Consensus includes gb:AI885290 /FEA=EST /DB_XREF=gi:5590454 /DB_XREF=est:wl92a04.x1 /CLONE=IMAGE:2432334 /UG=Hs.5378 spondin 1, (f-spondin) extracellular matrix protein	213994_s_at
superoxide dismutase 3, extracellular SEQ ID NOS: 55 (DNA) and 167 (amino acid)	gb:NM_003102.1 /DEF=Homo sapiens superoxide dismutase 3, extracellular (SOD3), mRNA. /FEA=mRNA /GEN=SOD3 /PROD=superoxide dismutase 3, extracellular /DB_XREF=gi:4507150 /UG=Hs.2420 superoxide dismutase 3, extracellular /FL=gb:J02947.1 gb:NM_003102.1	205236_x_at
tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator)	gb:BC002794.1 /DEF=Homo sapiens, tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator), clone MGC:3753, mRNA, complete cds. /FEA=mRNA /PROD=tumor necrosis factor receptor superfamily,member 14 (herpesvirus	209354_at

SEQ ID NOS: 56 (DNA) and 168 (amino acid)	entry mediator) /DB_XREF=gi:12803894 /UG=Hs.279899 tumor necrosis factor receptor superfamily, member 14 (herpesvirus entry mediator) /FL=gb:BC002794.1 gb:U70321.1 gb:U81232.1 gb:NM_003820.1 gb:AF153978.1	
tumor necrosis factor receptor superfamily, member 6 SEQ ID NOS: 57 (DNA) and 169 (amino acid)	gb:NM_000043.1 /DEF=Homo sapiens tumor necrosis factor receptor superfamily, member 6 (TNFRSF6), mRNA. /FEA=mRNA /GEN=TNFRSF6 /PROD=apoptosis (APO-1) antigen 1 /DB_XREF=gi:4507582 /UG=Hs.82359 tumor necrosis factor receptor superfamily, member 6 /FL=gb:M67454.1 gb:NM_000043.1	204781_s_at
zinc finger protein 137 (clone pHZ-30) SEQ ID NOS: 58 (DNA) and 170 (amino acid)	gb:NM_003438.1 /DEF=Homo sapiens zinc finger protein 137 (clone pHZ-30) (ZNF137), mRNA. /FEA=mRNA /GEN=ZNF137 /PROD=zinc finger protein 137 (clone pHZ-30) /DB_XREF=gi:4507988 /UG=Hs.151689 zinc finger protein 137 (clone pHZ-30) /FL=gb:NM_003438.1 gb:U09414.1	207394_at
hypothetical protein FLJ22233 SEQ ID NO: 59 (DNA)	Consensus includes gb:AI339568 /FEA=EST /DB_XREF=gi:4076495 /DB_XREF=est:qk67e10.x1 /CLONE=IMAGE:1874058 /UG=Hs.286194 hypothetical protein FLJ22233 /FL=gb:NM_024959.1	222727_s_at
regenerating gene type IV SEQ ID NOS: 60 (DNA) and 171 (amino acid)	gb:AY007243.1 /DEF=Homo sapiens regenerating gene type IV mRNA, complete cds. /FEA=mRNA /PROD=regenerating gene type IV /DB_XREF=gi:12621025 /UG=Hs.105484 Homo sapiens regenerating gene type IV mRNA, complete cds /FL=gb:AY007243.1	223447_at
Homo sapiens cDNA: FLJ21962 fis, clone HEP05564 SEQ ID NO: 61 (DNA)	Consensus includes gb:AK025615.1 /DEF=Homo sapiens cDNA: FLJ21962 fis, clone HEP05564. /FEA=mRNA /DB_XREF=gi:10438186 /UG=Hs.7567 Homo sapiens cDNA: FLJ21962 fis, clone HEP05564	225285_at
ESTs SEQ ID NO: 62 (DNA)	Consensus includes gb:N37023 /FEA=EST /DB_XREF=gi:1158165 /DB_XREF=est:yy40d03.s1 /CLONE=IMAGE:273701 /UG=Hs.235883 ESTs	225407_at
phosphoprotein associated with glycosphingolipid-	Consensus includes gb:AK000680.1 /DEF=Homo sapiens cDNA FLJ20673 fis, clone KAIA4464. /FEA=mRNA	225626_at

enriched microdomains SEQ ID NOS: 63 (DNA) and 172 (amino acid)	/DB_XREF=gi:7020924 /UG=Hs.266175 phosphoprotein associated with GEMs /FL=gb:AF240634.1 gb:NM_018440.1	
prostate cancer associated protein 7 SEQ ID NO: 64 (DNA)	Consensus includes gb:AA633076 /FEA=EST /DB_XREF=gi:2556490 /DB_XREF=est:nq38a06.s1 /CLONE=IMAGE:1146130 /UG=Hs.27495 prostate cancer associated protein 7	226167_at
Homo sapiens, Similar to RIKEN cDNA 1110060O18 gene, clone MGC:17236 IMAGE:3864137, mRNA, complete cds SEQ ID NO: 65 (DNA)	Consensus includes gb:AA524690 /FEA=EST /DB_XREF=gi:2265618 /DB_XREF=est:ng38e07.s1 /CLONE=IMAGE:937092 /UG=Hs.294143 ESTs, Weakly similar to predicted using Genefinder C.elegans	226168_at
hypothetical protein FLJ20209 SEQ ID NO: 66 (DNA)	Consensus includes gb:BF111925 /FEA=EST /DB_XREF=gi:10941704 /DB_XREF=est:7l38g05.x1 /CLONE=IMAGE:3523784 /UG=Hs.3685 hypothetical protein FLJ20209	226171_at
Homo sapiens mRNA for KIAA1190 protein, partial cds SEQ ID NOS: 67 (DNA) and 173 (amino acid)	Consensus includes gb:AA532640 /FEA=EST /DB_XREF=gi:2276894 /DB_XREF=est:nj17c04.s1 /CLONE=IMAGE:986598 /UG=Hs.206259 Homo sapiens mRNA for KIAA1190 protein, partial cds	226484_at
KIAA1543 protein SEQ ID NOS: 68 (DNA) and 174 (amino acid)	Consensus includes gb:AB040976.1 /DEF=Homo sapiens mRNA for KIAA1543 protein, partial cds. /FEA=mRNA /GEN=KIAA1543 /PROD=KIAA1543 protein /DB_XREF=gi:7959352 /UG=Hs.17686 KIAA1543 protein	226494_at
hypothetical protein MGC20702 SEQ ID NO: 69 (DNA)	Consensus includes gb:AK002203.1 /DEF=Homo sapiens cDNA FLJ11341 fis, clone PLACE1010786. /FEA=mRNA /DB_XREF=gi:7023932 /UG=Hs.10260 Homo sapiens cDNA FLJ11341 fis, clone PLACE1010786	226992_at
Homo sapiens cDNA FLJ13137 fis, clone NT2RP3003150	Consensus includes gb:AA129774 /FEA=EST /DB_XREF=gi:1690185 /DB_XREF=est:zl16h09.s1	227019_at

SEQ ID NO: 70 (DNA)	/CLONE=IMAGE:502145 /UG=Hs.288905 Homo sapiens cDNA FLJ13137 fis, clone NT2RP3003150	
hypothetical protein FLJ23563 SEQ ID NO: 71 (DNA)	Consensus includes gb:AW138767 /FEA=EST /DB_XREF=gi:6143085 /DB_XREF=est:UI-H-BI1-aep-a-12-0-UI.s1 /CLONE=IMAGE:2719799 /UG=Hs.274256 hypothetical protein FLJ23563	227180_at
ESTs SEQ ID NO: 72 (DNA)	Consensus includes gb:AW264333 /FEA=EST /DB_XREF=gi:6641075 /DB_XREF=est:xq98e01.x1 /CLONE=IMAGE:2758680 /UG=Hs.21835 ESTs	227320_at
ESTs SEQ ID NO: 73 (DNA)	Consensus includes gb:BF589359 /FEA=EST /DB_XREF=gi:11681683 /DB_XREF=est:nab25d01.x1 /CLONE=IMAGE:3266737 /UG=Hs.13256 ESTs	227354_at
Homo sapiens, Similar to RIKEN cDNA 1810037C20 gene, clone MGC:21481 IMAGE:3852062, mRNA, complete cds SEQ ID NO: 74 (DNA)	Consensus includes gb:AW001287 /FEA=EST /DB_XREF=gi:5848203 /DB_XREF=est:wu27e06.x1 /CLONE=IMAGE:2521282 /UG=Hs.61265 ESTs, Weakly similar to G786_HUMAN PROTEIN GS3786 H.sapiens	227676_at
ESTs, Weakly similar to JX0331 laurate omega-hydroxylase [H.sapiens] SEQ ID NO: 75 (DNA)	Consensus includes gb:AA557324 /FEA=EST /DB_XREF=gi:2327801 /DB_XREF=est:nl81a02.s1 /CLONE=IMAGE:1057034 /UG=Hs.26040 ESTs, Weakly similar to fatty acid omega-hydroxylase H.sapiens	227702_at
Homo sapiens cDNA: FLJ22063 fis, clone HEP10326 SEQ ID NO: 76 (DNA)	Consensus includes gb:T86159 /FEA=EST /DB_XREF=gi:714511 /DB_XREF=est:yd84h07.s1 /CLONE=IMAGE:114973 /UG=Hs.10450 Homo sapiens cDNA: FLJ22063 fis, clone HEP10326	227724_at
GalNAc alpha-2, 6-sialyltransferase I, long form SEQ ID NOS: 77 (DNA) and 175 (amino acid)	Consensus includes gb:Y11339.2 /DEF=Homo sapiens mRNA for GalNAc alpha-2, 6-sialyltransferase I, long form. /FEA=mRNA /PROD=GalNAc alpha-2,6-sialyltransferase I /DB_XREF=gi:7576275 /UG=Hs.105352 GalNAc alpha-2, 6-sialyltransferase I, long form	227725_at

ESTs, Weakly similar to JE0350 Anterior gradient-2 [H.sapiens] SEQ ID NO: 78 (DNA)	Consensus includes gb:AI827789 /FEA=EST /DB_XREF=gi:5448449 /DB_XREF=est:wf33a07.x1 /CLONE=IMAGE:2357364 /UG=Hs.100686 ESTs, Weakly similar to JE0350 Anterior gradient-2 H.sapiens	228241_at
ESTs SEQ ID NO: 79 (DNA)	Consensus includes gb:AI700341 /FEA=EST /DB_XREF=gi:4988241 /DB_XREF=est:wd06e10.x1 /CLONE=IMAGE:2327370 /UG=Hs.110406 ESTs	228653_at
ESTs SEQ ID NO: 80 (DNA)	Consensus includes gb:BG494007 /FEA=EST /DB_XREF=gi:13455521 /DB_XREF=est:602542289F1 /CLONE=IMAGE:4673182 /UG=Hs.203213 ESTs	228716_at
anterior gradient 2 (Xenepus laevis) homolog SEQ ID NO: 81 (DNA)	Consensus includes gb:AI922323 /FEA=EST /DB_XREF=gi:5658287 /DB_XREF=est:wn90h03.x1 /CLONE=IMAGE:2453141 /UG=Hs.293380 ESTs	228969_at
Homo sapiens cDNA: FLJ23331 fis, clone HEP12664 SEQ ID NO: 82 (DNA)	Consensus includes gb:AK026984.1 /DEF=Homo sapiens cDNA: FLJ23331 fis, clone HEP12664. /FEA=mRNA /DB_XREF=gi:10439980 /UG=Hs.50742 Homo sapiens cDNA: FLJ23331 fis, clone HEP12664	229021_at
ESTs SEQ ID NO: 83 (DNA)	Consensus includes gb:AI559300 /FEA=EST /DB_XREF=gi:4509505 /DB_XREF=est:tq43d03.x1 /CLONE=IMAGE:2211557 /UG=Hs.294140 ESTs	229331_at
hypothetical protein SEQ ID NO: 84 (DNA)	Consensus includes gb:AI830823 /FEA=EST /DB_XREF=gi:5451416 /DB_XREF=est:wj52b06.x1 /CLONE=IMAGE:2406419 /UG=Hs.95549 hypothetical protein	229439_s_at
ESTs SEQ ID NO: 85 (DNA)	Consensus includes gb:BF431989 /FEA=EST /DB_XREF=gi:11444103 /DB_XREF=est:nab84a05.x1 /CLONE=IMAGE:3274280 /UG=Hs.203213 ESTs	229657_at
ESTs SEQ ID NO: 86 (DNA)	Consensus includes gb:BF589413 /FEA=EST /DB_XREF=gi:11681737 /DB_XREF=est:nab26b11.x1 /CLONE=IMAGE:3267020 /UG=Hs.55501	229893_at

	ESTs	
brain-specific protein p25 alpha SEQ ID NO: 87 (DNA)	Consensus includes gb:BG055052 /FEA=EST /DB_XREF=gi:12512386 /DB_XREF=est:nac94g06.x1 /CLONE=IMAGE:3441995 /UG=Hs.29353 brain-specific protein p25 alpha	230104_s_at
ESTs, Weakly similar to MMHUE4 erythrocyte membrane protein 4.1, parent splice form [H.sapiens] SEQ ID NO: 88 (DNA)	Consensus includes gb:BF110588 /FEA=EST /DB_XREF=gi:10940278 /DB_XREF=est:7n39e12.x1 /CLONE=IMAGE:3567071 /UG=Hs.150478 ESTs, Weakly similar to KIAA0987 protein H.sapiens	230645_at
ESTs SEQ ID NO: 89 (DNA)	Consensus includes gb:BF592062 /FEA=EST /DB_XREF=gi:11684386 /DB_XREF=est:7n98h06.x1 /CLONE=IMAGE:3572962 /UG=Hs.233890 ESTs	230760_at
hepatocyte nuclear factor 4, alpha SEQ ID NO: 90 (DNA)	Consensus includes gb:AI032108 /FEA=EST /DB_XREF=gi:3250320 /DB_XREF=est:ow92d11.x1 /CLONE=IMAGE:1654293 /UG=Hs.54424 hepatocyte nuclear factor 4, alpha	230914_at
ESTs SEQ ID NO: 91 (DNA)	Consensus includes gb:AW203959 /FEA=EST /DB_XREF=gi:6503431 /DB_XREF=est:UI-H-BI1-aeu-b-12-0-UI.s1 /CLONE=IMAGE:2720590 /UG=Hs.149532 ESTs	230944_at
ESTs SEQ ID NO: 92 (DNA)	Consensus includes gb:AI139990 /FEA=EST /DB_XREF=gi:3647447 /DB_XREF=est:qa47d03.x1 /CLONE=IMAGE:1689893 /UG=Hs.134586 ESTs	231022_at
ESTs SEQ ID NO: 93 (DNA)	Consensus includes gb:AI806131 /FEA=EST /DB_XREF=gi:5392697 /DB_XREF=est:wf06c06.x1 /CLONE=IMAGE:2349802 /UG=Hs.99376 ESTs	231148_at
hypothetical protein FLJ23045 SEQ ID NO: 94 (DNA)	Consensus includes gb:AB046810.1 /DEF=Homo sapiens mRNA for KIAA1590 protein, partial cds. /FEA=mRNA /GEN=KIAA1590 /PROD=KIAA1590 protein /DB_XREF=gi:10047254 /UG=Hs.101774 hypothetical protein FLJ23045	232083_at
Homo sapiens cDNA:	Consensus includes gb:AK026404.1	232321_at

FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA SEQ ID NO: 95 (DNA)	/DEF=Homo sapiens cDNA: FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA. /FEA=mRNA /DB_XREF=gi:10439257 /UG=Hs.271819 Homo sapiens cDNA: FLJ22751 fis, clone KAIA0483, highly similar to AF016692 Homo sapiens small intestinal mucin (MUC3) mRNA	
Homo sapiens PAC clone RP5-855D21 SEQ ID NOS: 96 (DNA), 176 (amino acid), 177 (amino acid), and 178 (amino acid)	Consensus includes gb:AC004908 /DEF=Homo sapiens PAC clone RP5-855D21 /FEA=CDS_3 /DB_XREF=gi:4156179 /UG=Hs.249181 Homo sapiens PAC clone RP5-855D21	232641_at
putative microtubule-binding protein SEQ ID NO: 97 (DNA)	Consensus includes gb:AJ251708.1 /DEF=Homo sapiens partial mRNA for putative microtubule-binding protein. /FEA=mRNA /PROD=putative microtubule-binding protein /DB_XREF=gi:6491740 /UG=Hs.326544 putative microtubule-binding protein	234669_x_at
ESTs SEQ ID NO: 98 (DNA)	Consensus includes gb:AI741469 /FEA=EST /DB_XREF=gi:5109757 /DB_XREF=est:wg11b01.x1 /CLONE=IMAGE:2364745 /UG=Hs.57787 ESTs	234970_at
ESTs SEQ ID NO: 99 (DNA)	Consensus includes gb:AI417897 /FEA=EST /DB_XREF=gi:4261401 /DB_XREF=est:tg55b06.x1 /CLONE=IMAGE:2112659 /UG=Hs.235860 ESTs	235444_at
ESTs SEQ ID NO: 100 (DNA)	Consensus includes gb:AA827649 /FEA=EST /DB_XREF=gi:2900090 /DB_XREF=est:od01a12.s1 /CLONE=IMAGE:1357918 /UG=Hs.105317 ESTs	235515_at
ESTs SEQ ID NO: 101 (DNA)	Consensus includes gb:AI493909 /FEA=EST /DB_XREF=gi:4394912 /DB_XREF=est:qz94e02.x1 /CLONE=IMAGE:2042234 /UG=Hs.6131 ESTs	235562_at
ESTs SEQ ID NO: 102 (DNA)	Consensus includes gb:AV741130 /FEA=EST /DB_XREF=gi:10858711 /DB_XREF=est:AV741130 /CLONE=CBCATB06 /UG=Hs.173704	235651_at

	ESTs, Moderately similar to ALU8_HUMAN ALU SUBFAMILY SX SEQUENCE CONTAMINATION WARNING ENTRY H.sapiens	
ESTs, Weakly similar to I38588 reverse transcriptase homolog [H.sapiens] SEQ ID NO: 103 (DNA)	Consensus includes gb:AI864053 /FEA=EST /DB_XREF=gi:5528160 /DB_XREF=est:wj55h10.x1 /CLONE=IMAGE:2406787 /UG=Hs.39972 ESTs, Weakly similar to I38588 reverse transcriptase homolog H.sapiens	235678_at
ESTs SEQ ID NO: 104 (DNA)	Consensus includes gb:AW339510 /FEA=EST /DB_XREF=gi:6836136 /DB_XREF=est:xz91h08.x1 /CLONE=IMAGE:2871615 /UG=Hs.42722 ESTs	235866_at
ESTs SEQ ID NO: 105 (DNA)	Consensus includes gb:AI076192 /FEA=EST /DB_XREF=gi:3405370 /DB_XREF=est:oz01g07.x1 /CLONE=IMAGE:1674108 /UG=Hs.131933 ESTs	236422_at
ESTs SEQ ID NO: 106 (DNA)	Consensus includes gb:AL044570 /FEA=EST /DB_XREF=gi:5432785 /DB_XREF=est:DKFZp434L082_s1 /CLONE=DKFZp434L082 /UG=Hs.147975 ESTs	236548_at
ESTs SEQ ID NO: 107 (DNA)	Consensus includes gb:AI968097 /FEA=EST /DB_XREF=gi:5764915 /DB_XREF=est:wu13a12.x1 /CLONE=IMAGE:2516830 /UG=Hs.131360 ESTs	237835_at
ESTs SEQ ID NO: 108 (DNA)	Consensus includes gb:AI733801 /FEA=EST /DB_XREF=gi:5054914 /DB_XREF=est:qk39c04.x5 /CLONE=IMAGE:1871334 /UG=Hs.146186 ESTs	237923_at
ESTs SEQ ID NO: 109 (DNA)	Consensus includes gb:BF594323 /FEA=EST /DB_XREF=gi:11686647 /DB_XREF=est:7h79g07.x1 /CLONE=IMAGE:3322236 /UG=Hs.158989 ESTs	238103_at
Homo sapiens, clone MGC:16402 IMAGE:3940360, mRNA, complete cds SEQ ID NO: 110 (DNA)	Consensus includes gb:T69015 /FEA=EST /DB_XREF=gi:680163 /DB_XREF=est:yc31f04.s1 /CLONE=IMAGE:82303 /UG=Hs.192728 ESTs	238422_at

ESTs SEQ ID NO: 111 (DNA)	Consensus includes gb:AA502384 /FEA=EST /DB_XREF=gi:2237351 /DB_XREF=est:ne27f11.s1 /CLONE=IMAGE:898605 /UG=Hs.151529 ESTs	238956_at
ESTs SEQ ID NO: 112 (DNA)	Consensus includes gb:AI739241 /FEA=EST /DB_XREF=gi:5101222 /DB_XREF=est:wi14h02.x1 /CLONE=IMAGE:2390259 /UG=Hs.171480 ESTs	238984_at
ESTs SEQ ID NO: 113 (DNA)	Consensus includes gb:AA088446 /FEA=EST /DB_XREF=gi:1633958 /DB_XREF=est:zl89f04.s1 /CLONE=IMAGE:511807 /UG=Hs.170298 ESTs	239065_at
ESTs SEQ ID NO: 114 (DNA)	Consensus includes gb:AI493046 /FEA=EST /DB_XREF=gi:4394049 /DB_XREF=est:qz49b04.x1 /CLONE=IMAGE:2030191 /UG=Hs.146133 ESTs	239148_at
ESTs SEQ ID NO: 115 (DNA)	Consensus includes gb:AI243098 /FEA=EST /DB_XREF=gi:3838495 /DB_XREF=est:qh26e03.x1 /CLONE=IMAGE:1845820 /UG=Hs.178398 ESTs	239966_at
ESTs, Weakly similar to A49175 Motch B protein - mouse [M.musculus] SEQ ID NO: 116 (DNA)	Consensus includes gb:AI633523 /FEA=EST /DB_XREF=gi:4684853 /DB_XREF=est:th68b11.x1 /CLONE=IMAGE:2123805 /UG=Hs.44705 ESTs	240106_at
ESTs SEQ ID NO: 117 (DNA)	Consensus includes gb:AI300126 /FEA=EST /DB_XREF=gi:3959472 /DB_XREF=est:qn54f02.x1 /CLONE=IMAGE:1902075 /UG=Hs.257858 ESTs	240830_at
ESTs SEQ ID NO: 118 (DNA)	Consensus includes gb:AI917390 /FEA=EST /DB_XREF=gi:5637245 /DB_XREF=est:ts79a05.x1 /CLONE=IMAGE:2237456 /UG=Hs.99415 ESTs	240964_at
betacellulin SEQ ID NO: 119 (DNA)	Consensus includes gb:AI620677 /FEA=EST /DB_XREF=gi:4629803 /DB_XREF=est:tu85e09.x1 /CLONE=IMAGE:2257864 /UG=Hs.154191 ESTs	241412_at
ESTs	Consensus includes gb:H05025 /FEA=EST	241874_at

SEQ ID NO: 120 (DNA)	/DB_XREF=gi:868577 /DB_XREF=est:yl74g12.s1 /CLONE=IMAGE:43864 /UG=Hs.323767 ESTs	
ESTs SEQ ID NO: 121 (DNA)	Consensus includes gb:AW024656 /FEA=EST /DB_XREF=gi:5878186 /DB_XREF=est:wu78h05.x1 /CLONE=IMAGE:2526201 /UG=Hs.233382 ESTs, Moderately similar to AF119917 62 PRO2822 H.sapiens	242358_at
ESTs SEQ ID NO: 122 (DNA)	Consensus includes gb:BF696216 /FEA=EST /DB_XREF=gi:11981624 /DB_XREF=est:602124536F1 /CLONE=IMAGE:4281632 /UG=Hs.188724 ESTs	242626_at
ESTs SEQ ID NO: 123 (DNA)	Consensus includes gb:N57929 /FEA=EST /DB_XREF=gi:1201819 /DB_XREF=est:yv61e06.s1 /CLONE=IMAGE:247234 /UG=Hs.48100 ESTs	242978_x_at
ESTs, Weakly similar to ALU1_HUMAN ALU SUBFAMILY J SEQUENCE CONTAMINATION WARNING ENTRY [H.sapiens] SEQ ID NO: 124 (DNA)	Consensus includes gb:AI457984 /FEA=EST /DB_XREF=gi:4312002 /DB_XREF=est:tj66a04.x1 /CLONE=IMAGE:2146446 /UG=Hs.165900 ESTs, Weakly similar to ALUC_HUMAN !!!! ALU CLASS C WARNING ENTRY !!! H.sapiens	243729_at
ESTs SEQ ID NO: 125 (DNA)	Consensus includes gb:AA581439 /FEA=EST /DB_XREF=gi:2359211 /DB_XREF=est:nh13c10.s1 /CLONE=IMAGE:952242 /UG=Hs.152328 ESTs	244650_at

Biological Validation of Biomarker Candidates: Modulation of Expression by Treatment with Ligands for EGFR or by Treatment with Inhibitors for EGFR

To validate the significance of the biomarker candidates to predict the activity of the EGFR pathway and thereby the sensitivity of cancer cell to inhibition of EGFR by therapy, genes that would be regulated by the EGFR pathway were identified. Demonstration of that property for the EGFR biomarker candidates described above would add additional credibility as it would link these genes functionally to the EGFR pathway. Colon cancer and a lung cancer cell lines were treated with epidermal

growth factor, in the absence of serum or, in the presence of serum with the EGFR modulator BMS-461453 or the EGFR modulator cetuximab (also known as C225, a chimeric monoclonal EGFR antibody). To identify genes induced by epidermal growth factor, serum starved cells were treated with 20ng/ml EGF for 0.5, 6, and 18 hours. Control cells were treated with media alone. The expression profiling was performed, and data was analyzed using GeneChip® Expression Analysis software MAS 5.0 (Affymetrix, Santa Clara, California).

Genes inhibited by EGFR antagonists were identified by treating cells in the presence of 10% serum with 0.5uM of BMS-461453 or 1ug/ml or 5ug/ml of C225 for 6 and 24 hours. Cells exposed to 0.05% DMSO were used as the experimental control. Expression profiling was performed, and data were analyzed using GeneChip® Expression Analysis software MAS 5.0.

The gene expression of the inhibitor or EGFR treated cell lines was compared pair-wise to the untreated controls. Polynucleotides from the biomarker list, in which expression was increased two fold with EGFR exposure or decreased two fold with EGFR inhibitor treatment compared to the untreated controls, were considered to be modulated by EGFR. These biomarkers are provided in Table 4. Examples of the biomarkers include EphA1, B-cell translocation gene 2, prostaglandin-endoperoxide synthase 2 and serine (or cysteine) proteinase inhibitor (clade B), which are highly expressed in sensitive cells and up regulated by treatment with EGFR. On the other hand, spondin 1, talin 2 and nuclear receptor subfamily 3 are genes whose expression levels correlate with sensitivity or resistance of colon cancer cell lines and are consistently down regulated by treatment with EGFR inhibitors BMS-461453 and C225. It appears that these biomarkers are likely to be directly or indirectly involved in the EGFR signaling pathway, based on their expression modulation by EGF or EGFR inhibitor treatment.

Identification of Top Biomarkers

In an attempt to further prioritize biomarkers for use in predicting response of cancer cells to treatment with one or more EGFR modulators, the following filter criteria were used on the Table 4 biomarkers to identify a total of fourteen biomarkers (Table 5) as the top biomarkers:

(1) results from the highly significant correlation of gene expression with IC_{50}: A p-value < 0.01 in the student TTEST or a Pearson value < – 0.6 described above;

(2) results from the modulation of expression by EGFR ligand and/or EGFR inhibitor treatment described above; and

(3) biomarkers supported by literature revealing a direct relationship between the EGFR pathway and the biomarkers.

TABLE 5 - Top Fourteen Biomarkers

Biomarker Name	Literature Support Citation	Induced by EGF/ Inhibited by EGFR antagonist
mucin 2, intestinal/tracheal (MUC2)	J Biol Chem. 2002 Aug 30;277(35):32258-67	Expression inhibited 2 fold by EGFR antagonist in GEO colon cancer cell line
intestinal mucin 3 (MUC3)	No	Expression inhibited 2 fold by EGFR antagonist in GEO colon cancer cell line
Homo sapiens cystic fibrosis transmembrane conductance regulator ATP-binding cassette (sub-family C, member 7) (CFTR)	No	Expression stimulated 2 fold by EGFR in H292 lung cancer cell line
f-spondin (KIAA0762) protein	No	Expression inhibited 2 fold by EGFR antagonist in LOVO colon cancer cell line
3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2	J Invest Dermatol. 2000 Jan;114(1):83-7	Expression stimulated 3 fold by EGFR in H292 lung cancer cell line
serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 (SERPINB5	Electrophoresis. 2001 Aug;22(14):3001-8.	Expression stimulated 2 fold by EGFR in H292 lung cancer cell line
BTG family, member 2 (BTG2)	No	Expression stimulated 2 fold by EGFR in H292 lung cancer cell line
talin 2 (TLN2)	No	Expression inhibited 2 fold by EGFR antagonist in GEO colon cancer cell line
arachidonic acid	J Biol Chem. 1994 Aug	no

epoxygenase	26;269(34):21786-92.	
prostaglandin G/H synthase and cyclooxygenase	J Biol Chem. 1994 Aug 26;269(34):21786-92.	Expression stimulated 6 fold by EGFR in H292 lung cancer cell line
EphA1 (EPHA1)	No	Expression stimulated 2 fold by EGFR in CACO2 colon cancer cell line
hemoglobin, alpha 1 (HBA1)	No	Expression inhibited 2 fold by EGFR antagonist in GEO colon cancer cell line
bone morphogenetic protein 2	Development 2000 Nov;127(22):4993-5005	no
betacellulin (BTC)*	Biochem Biophys Res Commun. 2002 Jun 28;294(5):1040-6	no

*The gene betacellulin showed counter regulation with EGFR expression as defined for the EGFR-A list but had just a p value of 0.04 in the Student's TTest for correlation with IC_{50}. It was still selected as a top biomarker for the strong literature support, as betacellulin is one of the published ligands of EGFR.

Utility of Biomarkers

Polynucleotides that correlate to a specific property of a biological system can be used to make predictions about that biological system and other biological systems. To show the predictive utility of biomarkers that correlate to EGFR modulator sensitivity and resistance, these polynucleotides were tested for their ability to predict the response of twenty two colon cancer cell lines to a small molecule EGFR modulator.

The invention includes single biomarkers including, for example, the fourteen top biomarkers which were tested in a voting scheme. For that purpose, the mean expression value was calculated for all fourteen biomarkers. Colon cancer cell lines which showed an expression level above the mean were then voted to be sensitive, and colon cancer cell lines with expression levels below the mean were voted to be resistant. After this procedure, the voting was compared to the actual sensitivity/resistance status according to the definition based on IC_{50} (see above) and an error rate was calculated. The error rates of the fourteen top biomarkers are shown in Table 6.

TABLE 6 - Error Rates of Fourteen Top Biomarkers

Biomarker Name	Pearsons value	TTEST P value	Prediction error rate
mucin 2,	-0.531	0.0083	20%

intestinal/tracheal (MUC2)			
intestinal mucin 3 (MUC3)	-0.639	0.0004	11.72%
Homo sapiens cystic fibrosis transmembrane conductance regulator ATP-binding cassette (sub-family C, member 7) (CFTR)	-0.646	9E-05	5.9%
f-spondin (KIAA0762) protein	-0.622	0.0004	12.8%
3-hydroxy-3-methylglutaryl-Coenzyme A synthase 2	-0.575	0.0029	21.75%
serine (or cysteine) proteinase inhibitor, clade B (ovalbumin), member 5 (SERPINB5	-0.62	0.0028	21.75%
BTG family, member 2 (BTG2)	-0.544	0.0042	20.5%
talin 2 (TLN2)	-0.874	3E-05	8.8%
EphA1 (EPHA1)	-0.647	0.0021	22%
hemoglobin, alpha 1 (HBA1)	-0.744	8E-05	20%
bone morphogenetic protein 2	-0.555	0.0091	31.8%
betacellulin (BTC)	-0.536	0.047	43.5%

The biomarkers talin, the Cystic fibrosis conductance regulator (CFTR), and mucin 3 were the best single biomarkers with error rates below 12%.

EXAMPLES:

EXAMPLE 1 - METHODS

IC50 determination--*in vitro* cytotoxicity assay

A small molecule EGFR inhibitor, erlotinib HCl (BMS-461453), was tested for cytoxicity *in vitro* against a panel of twenty-two human colon cancer cell lines

available from the American Type Culture Collection. Cytotoxicity was assessed in cells by MTS (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulphenyl)-2H-tetrazolium, inner salt) assay (T.L. Riss et al., 1992, *Mol. Biol. Cell*, 3 (Suppl.):184a).

To carry out the assays, the colon cells were plated at 4,000 cell/well in 96 well microtiter plates and 24 hours later serial diluted drugs were added. The concentration range for the EGFR inhibitor was from 5 μg/ml to 0.0016 μg/ml (roughly 10 μM to 0.0032 μM). The cells were incubated at 37 °C for 72 hours at which time the tetrazolium dye MTS (333 μg/ml final concentration) in combination with the electron coupling agent phenazine methosulfate (25 μM final concentration) was added. A dehydrogenase enzyme in live cells reduces the MTS to a form that absorbs light at 492 nm that can be quantified spectrophotometrically. The greater the absorbency, the greater the number of live cells. The results were expressed as an IC_{50}, which is the drug concentration required to inhibit cell proliferation (i.e., absorbance at 450 nm) to 50% of that of untreated control cells. The mean IC_{50} and standard deviation (SD) from multiple tests for each cell line were calculated.

Resistant/sensitive classification

The cell lines with IC_{50} below 6 μM were defined as sensitive to the EGFR inhibitor, whereas those with IC_{50} above 6 μM were considered to be resistant. The resistant/sensitive classification are shown above in Table 1, with five cell lines classified as sensitive and seventeen cell lines classified as resistant.

Gene expression profiling

The colon cells were grown using standard cell culture conditions: RPMI 1640 supplemented to contain 10% fetal bovine serum, 100 IU/ml penicillin, 100 mg/ml streptomycin, 2 mM L-glutamine and 10 mM Hepes (all from GibcoBRL, Rockville, Maryland). RNA was isolated from 50-70% confluent cells or drug-treated cells using the RNeasy™ kits commercially available from Qiagen (Valencia, California). Quality of the RNA was checked by measuring the 28s:18s ribosomal RNA ratio using Agilent 2100 bioanalyzer (Agilent, Technologies, Rockville, Maryland). Concentration of total RNA was determined spectrophotometrically. 10

μg of total RNA from each cell line was used to prepare biotinylated probe according to the Affymetrix Genechip® Expression Analysis Technical Manual, 2001. Targets were hybridized to Affymetrix high density oligonucleotide array human HG-U133 set chips (Affymetrix, Santa Clara, California). Arrays were then washed, and stained using the GeneChip Fluidics station according to the manufacture's instructions. The HG-U133 set consisting of two GeneChip® arrays contains nearly 45,000 probe sets representing more than 39,000 transcripts derived from approximately 33,000 well-substantiated human genes.

Preprocessing of microarray data for selecting biomarkers

Scanned image files were visually inspected for artifacts and analyzed with GeneChip® Expression Analysis software MAS 5.0 (Affymetrix, Santa Clara, California). The "Detection Call" (see Affymetrix manual) was used to determine whether a transcript was detected within one sample, as well as the "Signal" (see Affymetrix Genechip® Expression Analysis Technical Manual, 2001) which measured the relative abundance of a transcript. The trimmed mean intensity for each chip was scaled to 1,500 (see Affymetrix manual) in order to account for any minor differences in global chip intensity, so that the overall expression level for each cell line is comparable. Affymetrix control sequences were removed prior to analysis.

Induction Studies of colon and breast cell lines with EGFR inhibitors or EGFR ligand and selection of genes modulated by the inductions

The five colon cell lines and one lung cell line indicated with asterisks in Table 1 were used in the drug induction study. Three of the colon cell lines express EGFR and are sensitive to the EGFR inhibitor BMS-461453. The SW480 cell line, while expressing EGFR, is insensitive to the EGFR inhibitor, and the COLO320_DM does not express EGFR and is EGFR inhibitor resistant. The lung cancer cell line H292 expresses EGFR, but its sensitivity status is unknown. Cells were seeded in a 10 cm^2 culture plate with the medium described above and cultured for 24 hours.

For the EGF induction studies, the colon cell line CACO2 and the lung cancer H292 cell line were washed 2X PBS, and the media was changed to RPMI without serum. The next day the cells were treated with 20 ng/ml EGF, and eventually lysed

for RNA isolation 0.5, 6 and 18 hours post treatment. Gene expression was profiled as described below.

EGFR inhibition studies were conducted on the colon cell lines GEO, CCD33-CO, SW480 and COLO320DM. The expression profiling was performed as described above and data was analyzed using GeneChip® Expression Analysis software MAS 5.0. The expression data of EGFR inhibitor treated cell lines were compared pair-wise to that of untreated same cell line. A change was considered significant if a two fold difference in expression was demonstrated between the treated and the untreated control. Analysis was done for all four cell lines to compare the gene expression with or without EGFR inhibitor treatment.

EXAMPLE 2 - RT-PCR EXPRESSION PROFILING

RNA quantification was performed using the SYBR Green real-time PCR. The SYBR Green real-time PCR assay is one of the most precise methods for assaying the concentration of nucleic acid templates.

RNA can be prepared using standard methods, preferably, employing the RNeasy Kit commercially available from Qiagen (Valencia, California). cDNA template for real-time PCR can be generated using the Superscript™ First Strand Synthesis system for RT-PCR. SYBR Green real-time PCR reactions are prepared as follows: the reaction mix contains 20 ng first strand cDNA; 50 nM Forward Primer; 50 nM Reverse Primer; 0.75X SYBR Green I (Sigma); 1X SYBR Green PCR Buffer (50mMTris-HCl pH 8.3, 75 mM KCl); 10% DMSO; 3 mM $MgCl_2$; 300 µM each dATP, dGTP, dTTP, dCTP; 1 U Platinum® Taq DNA Polymerase High Fidelity (Cat# 11304-029; Life Technologies; Rockville, Maryland). Real-time PCR is performed using an Applied Biosystems 5700 Sequence Detection System. Conditions are 95 °C for 10 minutes (denaturation and activation of Platinum® Taq DNA Polymerase), 40 cycles of PCR (95 °C for 15 seconds, 60 °C for 1 minute). PCR products are analyzed for uniform melting using an analysis algorithm built into the 5700 Sequence Detection System.

cDNA quantification used in the normalization of template quantity is performed using SYBR Green real-time PCR. Expression of EGFR is normalized to GAPDH expression as described below.

The sequences for the GAPDH oligonucleotides used in the SYBR Green real-time PCR reactions are:

GAPDH-F: 5'-AGCCGAGCCACATCGCT-3' (SEQ ID NO: 191)

GAPDH-R: 5'-GTGACCAGGCGCCCAATAC-3' (SEQ ID NO: 192)

The sequences for the EGFR oligonucleotides used in the SYBR Green real-time PCR reactions are:

EGFR-F: 5'- GCGTCTCTTGCCGGAATGT-3' (SEQ ID NO: 193)

EGFR-R: 5'- AGCCGAGGCAGGGAATGCGTG-3' (SEQ ID NO: 194)

The Sequence Detection System generates a Ct (threshold cycle) value that is used to calculate a concentration for each input cDNA template. cDNA levels for each gene of interest are normalized to GAPDH cDNA levels to compensate for variations in total cDNA quantity in the input sample. This is done by generating GAPDH Ct values for each cell line. Ct values for the gene of interest and GAPDH are inserted into a modified version of the δδCt equation (Applied Biosystems Prism® 5700 Sequence Detection System User Manual) which is used to calculate a GAPDH normalized relative cDNA level for each specific cDNA. The δδCt equation is: relative quantity of nucleic acid template $=2^{\delta\delta Ct} = 2^{(\delta Cta-\delta Ctb)}$, where δCta = Ct target – Ct GAPDH, and δCtb = Ct reference – Ct GAPDH.

EXAMPLE 3 - PRODUCTION OF ANTIBODIES AGAINST THE BIOMARKERS

Antibodies against the biomarkers can be prepared by a variety of methods. For example, cells expressing an biomarker polypeptide can be administered to an animal to induce the production of sera containing polyclonal antibodies directed to the expressed polypeptides. In one aspect, the biomarker protein is prepared and isolated or otherwise purified to render it substantially free of natural contaminants, using techniques commonly practiced in the art. Such a preparation is then introduced into an animal in order to produce polyclonal antisera of greater specific activity for the expressed and isolated polypeptide.

In one aspect, the antibodies of the invention are monoclonal antibodies (or protein binding fragments thereof). Cells expressing the biomarker polypeptide can be cultured in any suitable tissue culture medium, however, it is preferable to culture cells in Earle's modified Eagle's medium supplemented to contain 10% fetal bovine

serum (inactivated at about 56 °C), and supplemented to contain about 10 g/l nonessential amino acids, about 1,00 U/ml penicillin, and about 100 μg/ml streptomycin.

The splenocytes of immunized (and boosted) mice can be extracted and fused with a suitable myeloma cell line. Any suitable myeloma cell line can be employed in accordance with the invention, however, it is preferable to employ the parent myeloma cell line (SP2/0), available from the ATCC. After fusion, the resulting hybridoma cells are selectively maintained in HAT medium, and then cloned by limiting dilution as described by Wands et al. (1981, *Gastroenterology*, 80:225-232). The hybridoma cells obtained through such a selection are then assayed to identify those cell clones that secrete antibodies capable of binding to the polypeptide immunogen, or a portion thereof.

Alternatively, additional antibodies capable of binding to the biomarker polypeptide can be produced in a two-step procedure using anti-idiotypic antibodies. Such a method makes use of the fact that antibodies are themselves antigens and, therefore, it is possible to obtain an antibody that binds to a second antibody. In accordance with this method, protein specific antibodies can be used to immunize an animal, preferably a mouse. The splenocytes of such an immunized animal are then used to produce hybridoma cells, and the hybridoma cells are screened to identify clones that produce an antibody whose ability to bind to the protein-specific antibody can be blocked by the polypeptide. Such antibodies comprise anti-idiotypic antibodies to the protein-specific antibody and can be used to immunize an animal to induce the formation of further protein-specific antibodies.

EXAMPLE 4 - IMMUNOFLUORESCENCE ASSAYS

The following immunofluorescence protocol may be used, for example, to verify EGFR biomarker protein expression on cells or, for example, to check for the presence of one or more antibodies that bind EGFR biomarkers expressed on the surface of cells. Briefly, Lab-Tek II chamber slides are coated overnight at 4 °C with 10 micrograms/milliliter (μg/ml) of bovine collagen Type II in DPBS containing calcium and magnesium (DPBS++). The slides are then washed twice with cold DPBS++ and seeded with 8000 CHO-CCR5 or CHO pC4 transfected cells in a total

volume of 125 μl and incubated at 37 °C in the presence of 95% oxygen / 5% carbon dioxide.

The culture medium is gently removed by aspiration and the adherent cells are washed twice with DPBS++ at ambient temperature. The slides are blocked with DPBS++ containing 0.2% BSA (blocker) at 0-4 °C for one hour. The blocking solution is gently removed by aspiration, and 125 μl of antibody containing solution (an antibody containing solution may be, for example, a hybridoma culture supernatant which is usually used undiluted, or serum/plasma which is usually diluted, e.g., a dilution of about 1/100 dilution). The slides are incubated for 1 hour at 0-4 °C. Antibody solutions are then gently removed by aspiration and the cells are washed five times with 400 μl of ice cold blocking solution. Next, 125 μl of 1 μg/ml rhodamine labeled secondary antibody (e.g., anti-human IgG) in blocker solution is added to the cells. Again, cells are incubated for 1 hour at 0-4 °C.

The secondary antibody solution is then gently removed by aspiration and the cells are washed three times with 400 μl of ice cold blocking solution, and five times with cold DPBS++. The cells are then fixed with 125 μl of 3.7% formaldehyde in DPBS++ for 15 minutes at ambient temperature. Thereafter, the cells are washed five times with 400 μl of DPBS++ at ambient temperature. Finally, the cells are mounted in 50% aqueous glycerol and viewed in a fluorescence microscope using rhodamine filters.

CLAIMS:

What is claimed is:

1. A method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises:

(a) measuring in the mammal the level of at least one biomarker selected from the biomarkers of Table 4;

(b) exposing the mammal to the EGFR modulator;

(c) following the exposing of step (b), measuring in the mammal the level of the at least one biomarker,

wherein a difference in the level of the at least one biomarker measured in step (c) compared to the level of the at least one biomarker measured in step (a) indicates that the mammal will respond therapeutically to said method of treating cancer.

2. The method of claim 1 wherein the at least one biomarker is selected from the biomarkers of Table 5.

3. The method of claim 1 wherein the method is an in vitro method, and wherein the at least one biomarker is measured in at least one mammalian biological sample from the mammal.

4. A method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises:

(a) exposing the mammal to the EGFR modulator;

(b) following the exposing of step (a), measuring in the mammal the level of the at least one biomarker selected from the biomarkers of Table 4,

wherein a difference in the level of the at least one biomarker measured in step (b), compared to the level of the biomarker in a mammal that has not been exposed to said EGFR modulator, indicates that the mammal will respond therapeutically to said method of treating cancer.

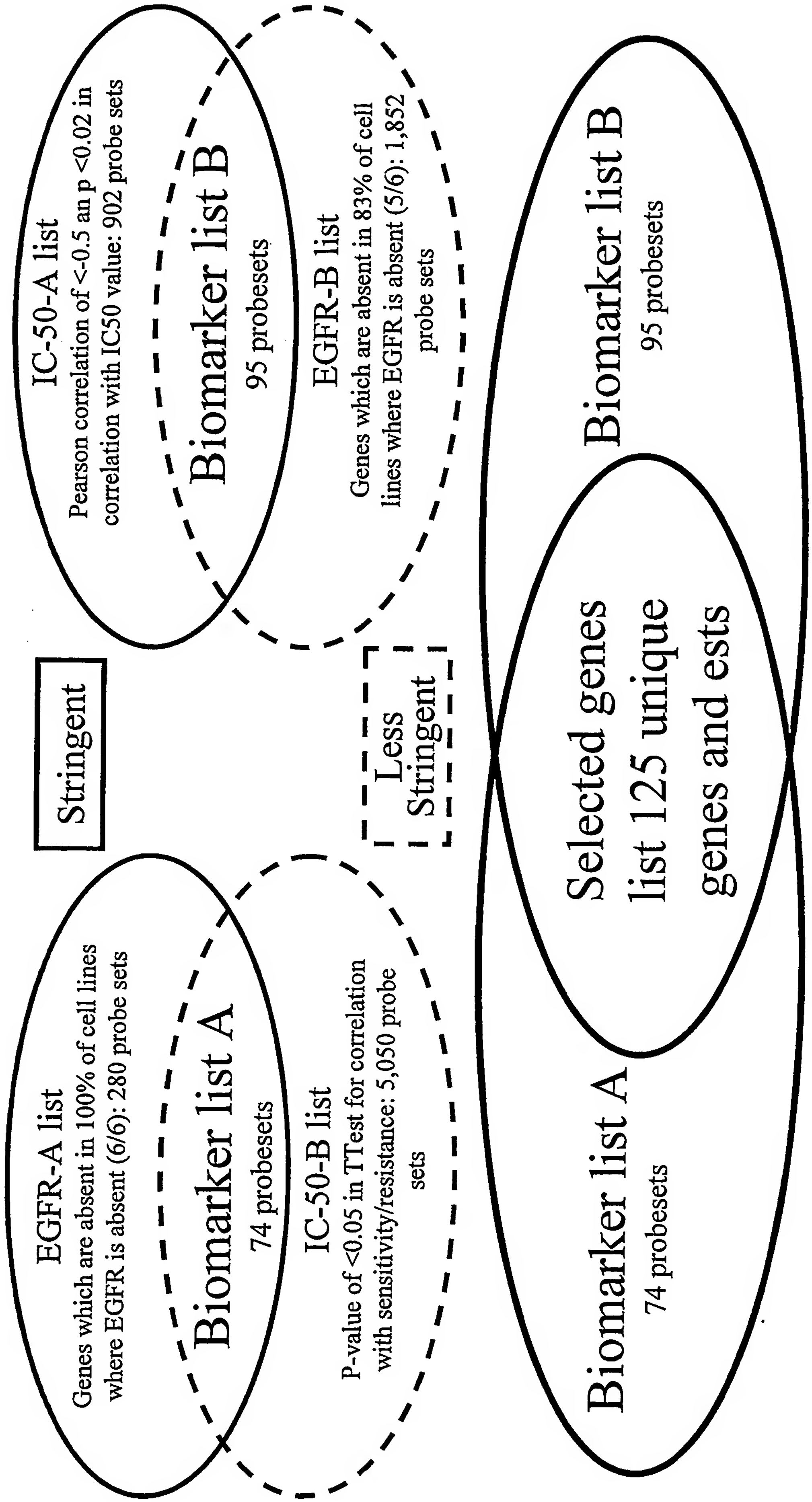

Stringent
EGFR-A list
Genes which are absent in 100% of cell lines where EGFR is absent (6/6): 280 probe sets
Biomarker list A
74 probesets
IC-50-B list
P-value of <0.05 in TTest for correlation with sensitivity/resistance: 5,050 probe sets
IC-50-A list
Pearson correlation of <-0.5 an p <0.02 in correlation with IC50 value: 902 probe sets
Biomarker list B
95 probesets
EGFR-B list
Genes which are absent in 83% of cell lines where EGFR is absent (5/6): 1,852 probe sets
Less Stringent
Biomarker list A
74 probesets
Selected genes list 125 unique genes and ests
Biomarker list B
95 probesets

FIG. 1

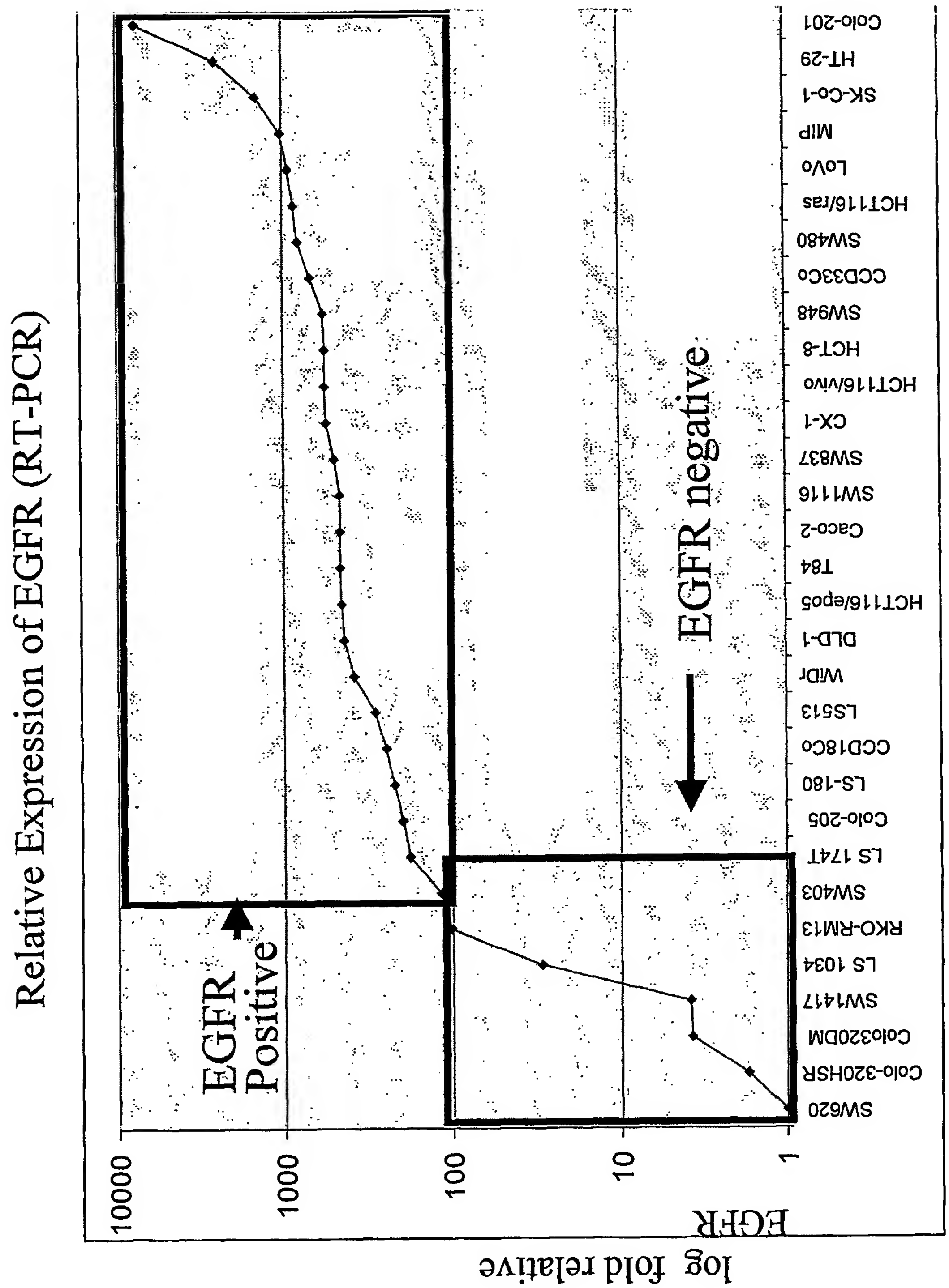

Relative Expression of EGFR (RT-PCR)
EGFR Positive
EGFR negative
10000
1000
100
10
1
EGFR
log fold relative
Colo-201
HT-29
SK-Co-1
MIP
LoVo
HCT116/ras
SW480
CCD33Co
SW948
HCT-8
HCT116/vivo
CX-1
SW837
SW1116
Caco-2
T84
HCT116/epo5
DLD-1
WiDr
LS513
CCD18Co
LS-180
Colo-205
LS 174T
SW403
RKO-RM13
LS 1034
SW1417
Colo320DM
Colo-320HSR
SW620

FIG. 2A

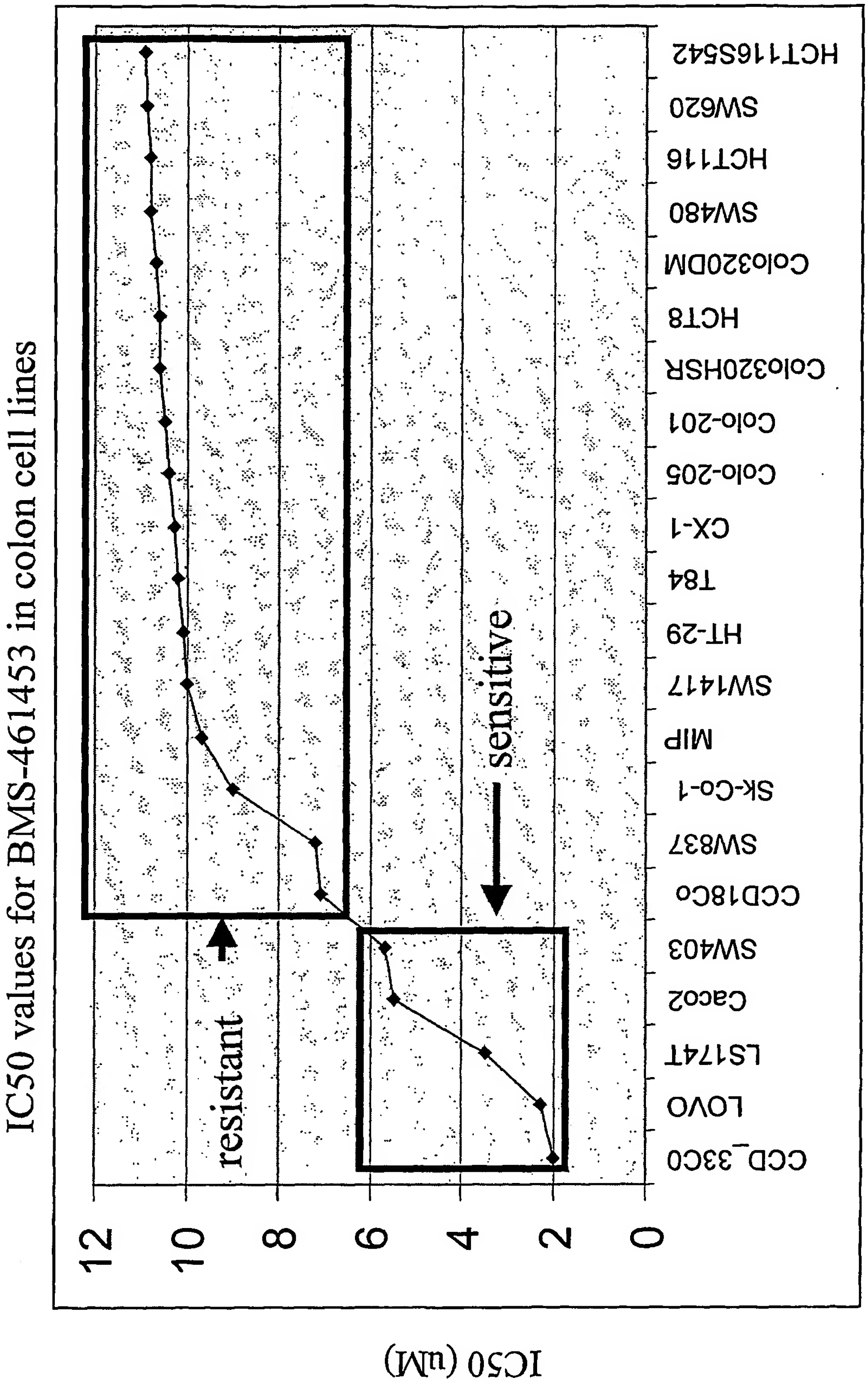

IC50 values for BMS-461453 in colon cell lines
IC50 (uM)
12
10
8
6
4
2
0
CCD_33Co
LOVO
LS174T
Caco2
SW403
CCD18Co
SW837
SK-Co-1
MIP
SW1417
HT-29
T84
CX-1
Colo-205
Colo-201
Colo320HSR
HCT8
Colo320DM
SW480
HCT116
SW620
HCT116S542
resistant
sensitive

FIG. 2B

SEQUENCE LISTING

<110> Amler, Lukas C.
Januario, Thomas

<120> BIOMARKERS AND METHODS FOR DETERMINING SENSITIVITY TO EPIDERMAL GROWTH FACTOR RECEPTOR MODULATORS

<130> D0304 PCT

<150> US 60/438,735
<151> 2003-01-08

<160> 194

<170> PatentIn version 3.2

<210> 1
<211> 2058
<212> DNA
<213> Human

<400> 1
cggtttctgc tgggtttctg aactgctggg tttctgcttg ctcctctgga gatgcagcgt 60

ctgttgactc cagtgaagcg cattctgcaa ctgacaagag cggtgcagga aacctccctc 120

acacctgctc gcctgctccc agtagcccac caaaggtttt ctacagcctc tgctgtcccc 180

ctggccaaaa cagatacttg gccaaaggac gtgggcatcc tggccctgga ggtctacttc 240

ccagcccaat atgtggacca aactgacctg gagaagtata acaatgtgga agcaggaaag 300

tatacagtgg gcttgggcca gacccgtatg ggcttctgct cagtccaaga ggacatcaac 360

tccctgtgcc tgacggtggt gcaacggctg atggagcgca tacagctccc atgggactct 420

gtgggcaggc tggaagtagg cactgagacc atcattgaca agtccaaagc tgtcaaaaca 480

gtgctcatgg aactcttcca ggattcaggc aatactgata ttgagggcat agataccacc 540

aatgcctgct acggtggtac tgcctccctc ttcaatgctg ccaactggat ggagtccagt 600

tcctgggatg gtcgttatgc catggtggtc tgtggagaca ttgccgtcta tcccagtggt 660

aatgctcgtc ccacaggtgg ggccggagct gtggctatgc tgattggccc aaaggcccct 720

ctggccctgg agcgagggct gaggggaacc catatggaga atgtgtatga cttctacaaa 780

ccaaatttgg cctcggagta cccaatagtg gatgggaagc tttccatcca gtgctacttg 840

cgggccttgg atcgatgtta cacatcatac cgtaaaaaaa tccagaatca gtggaagcaa 900

gctggcagcg atcgaccctt caccettgac gatttacagt atatgatctt tcatacaccc 960

ttttgcaaga tggtccagaa gtctctggct cgcctgatgt tcaatgactt cctgtcagcc 1020

agcagtgaca cacaaaccag cttatataag ggctggaggg ctttcggggg gctaaagctg 1080

gaagacacct acaccaacaa ggacctggat aaagcacttc taaaggcctc tcaggacatg 1140

ttcgacaaga aaaccaaggc ttccctttac ctctccactc acaatgggaa catgtacacc 1200

tcatccctgt acgggtgcct ggcctcgctt ctgtcccacc actctgccca agaactggct 1260

ggctccagga ttggtgcctt ctcttatggc tctggtttag cagcaagttt cttttcattt 1320

cgagtatccc aggatgctgc tccaggctct cccctggaca agttggtgtc cagcacatca 1380

gacctgccaa aacgcctagc ctcccgaaag tgtgtgtctc ctgaggagtt cacagaaata 1440

atgaaccaaa gagagcaatt ctaccataag gtgaatttct ccccacctgg tgacacaaac 1500

agccttttcc caggtacttg gtacctggag cgagtggacg agcagcatcg ccgaaagtat 1560

gcccggcgtc ccgtctaaag gtgttctgca gatccatgga aagcttcctg ggaaacgtat 1620

gctagcagag cttctccccg tgaatcatat ttttaagatc ccactcttag ctggtaaatg 1680

aatttgaatc gacatagtag ccccataagc atcagccctg tagagtgagg agccatctct 1740

agcgggccct tcattcctct ccatgctgca atcactgtcc tgggcttatg gtgcctatgg 1800

actaggggtc ctttgtgaaa gagcaagatg gagcaatgga gagaagacct cttcctgaat 1860

cactggactc cagaaatgtg catgcagatc agctgttgcc ttcaagatcc agataaactt 1920

tcctgtcatg tgttagaact ttattattat taatattgtt aaacttctgt gctgttcctg 1980

tgaatctcca aattttgtac cttgttctaa gctaatatat agcaattaaa aagagagaaa 2040

gagaaaaaaa aaaaaaaa 2058

<210> 2
<211> 532
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (519)..(519)
<223> n is a, c, g, or t

<400> 2
taactatgga aaaccatgtt tatttttaat aaaggatgac atttccaatc agtaaaatat 60

cataaaagta taaaaatgta ctaagtacaa tcattagcat tatgttatag gggaatagtg 120

gttataactt ttccctgtaa gatggcacat tggatggtca cagttggctt gatttacaga 180

ggggcaagag taggtgacca gttgtaccag ttgctccagt ttcctaggat ttgggactct 240

tgtaaaatga gaaagtccca ggcaaactgg gacggttggt cctacaagaa aaagagcagc 300

atcagagtgt tggctatagt ttggaactta ggaacaggat cagacattat tttttaactt 360

ctccacctat tttcccttta gctgtgaaat aaaaatccct tttgttatta ctgagggtgt 420

tacagctttc agaggctttt ttaccactgg gtttcatgta attttgactt aatacctatg 480

tcaagcctgg gaagaaaggc agttctaatc aacttgcang tgtggcattc tg 532

<210> 3
<211> 1547
<212> DNA
<213> Human

<400> 3
ggggacttct tgaacttgca gggagaataa cttgcgcacc ccactttgcg ccggtgcctt 60

tgccccagcg gagcctgctt cgccatctcc gagccccacc gcccctccac tcctcggcct 120

tgcccgacac tgagacgctg ttcccagcgt gaaaagagag actgcgcggc cggcacccgg 180

gagaaggagg aggcaaagaa aaggaacgga cattcggtcc ttgcgccagg tcctttgacc 240

agagtttttc catgtggacg ctctttcaat ggacgtgtcc ccgcgtgctt cttagacgga 300

ctgcggtctc ctaaaggtcg accatggtgg ccgggacccg ctgtcttcta gcgttgctgc 360

ttccccaggt cctcctgggc ggcgcggctg gcctcgttcc ggagctgggc cgcaggaagt 420

tcgcggcggc gtcgtcgggc cgcccctcat cccagccctc tgacgaggtc ctgagcgagt 480

tcgagttgcg gctgctcagc atgttcggcc tgaaacagag acccaccccc agcagggacg 540

ccgtggtgcc cccctacatg ctagacctgt atcgcaggca ctcaggtcag ccgggctcac 600

ccgccccaga ccaccggttg gagagggcag ccagccgagc caacactgtg cgcagcttcc 660

accatgaaga atctttggaa gaactaccag aaacgagtgg gaaaacaacc cggagattct 720

tctttaattt aagttctatc cccacggagg agtttatcac ctcagcagag cttcaggttt 780

tccgagaaca gatgcaagat gctttaggaa acaatagcag tttccatcac cgaattaata 840

tttatgaaat cataaaacct gcaacagcca actcgaaatt ccccgtgacc agacttttgg 900

acaccaggtt ggtgaatcag aatgcaagca ggtgggaaag ttttgatgtc acccccgctg 960

tgatgcggtg gactgcacag ggacacgcca accatggatt cgtggtggaa gtggcccact 1020

tggaggagaa acaaggtgtc tccaagagac atgttaggat aagcaggtct ttgcaccaag 1080

atgaacacag ctggtcacag ataaggccat tgctagtaac ttttggccat gatggaaaag 1140

ggcatcctct ccacaaaaga gaaaaacgtc aagccaaaca caaacagcgg aaacgcctta 1200

agtccagctg taagagacac cctttgtacg tggacttcag tgacgtgggg tggaatgact 1260

ggattgtggc tcccccgggg tatcacgcct tttactgcca cggagaatgc ccttttcctc 1320

tggctgatca tctgaactcc actaatcatg ccattgttca gacgttggtc aactctgtta 1380

actctaagat tcctaaggca tgctgtgtcc cgacagaact cagtgctatc tcgatgctgt 1440

accttgacga gaatgaaaag gttgtattaa agaactatca ggacatggtt gtggagggtt 1500

gtgggtgtcg ctagtacagc aaaattaaat acataaatat atatata 1547

<210> 4
<211> 5019
<212> DNA
<213> Human

<400> 4
gcctccgctg cagtcgctgc gtctccaagc aacatggctg acaaggccaa gcctgccaaa 60

gctgccaaca ggacgccccc caagtccccg ggggacccct cgaaggaccg ggcagccaag 120

aggctgtcgc tggaatcgga gggtgctggt gagggggcag ccgcatcccc tgagctcagt 180

gccctggagg aggccttccg gcgctttgcc gtgcacgggg acgccagggc caccgggagg 240

gagatgcacg gcaagaactg gtcgaagctg tgcaaggact gccaggtgat cgacggcagg 300

aacgtgaccg tcactgacgt ggacatcgtc ttcagcaaga tcaaagggaa gtcttgccgg 360

accatcacct ttgagcagtt ccaggaggcg ctggaggagc tcgccaagaa gcgattcaaa 420

gacaagagca gcgaggaggc cgttcgcgag gtgcacaggc tcatcgaggg caaggcgccc 480

atcatctcag gggtgacgaa agccatctcg tcgcccacag tgtcgaggct cacggacacc 540

accaagttca cgggctccca caaggagcgc ttcgacccct ctggcaaggg caagggcaag 600

gctggccgcg tggatctggt ggacgagtca ggctatgtgt ccggctacaa gcacgcaggc 660

acctacgacc agaaggtgca agggggcaag tagcccccgc tccatgcctc gcggcactgc 720

cggtgtcccc agagcaggga ctctgtcacc tcgcacttca ttacattcct gtactaactg 780

gggcagaact cagacgggtg ccccagaggg ggctgggggg cggccaggcc caggcctccc 840

tcctgcccct cctcctaccg gatgccccca gcactcccct ctcaaaccag gtttgggccc 900

cagttcgctg accctcctaa tacacctgcc tcgtcctcag ccatttccaa agtgtctcgc 960

ggatcacacc acactgggca cgtggtttgc aggtcaaagg ggcgttttaa agcagctggc 1020

tgtcatggca acaggaggct gtgctgacct cctgagcggc agacaccttc caggagccct 1080

gagggtggca ggagctaacc ccaaccagca ggcaactaac acggaattgg ccccacaccg 1140

gacgtgggag gtgtctgtgg ggcccgaggc ctgtcctgtg tgcagcggac accacggggc 1200

cttcctgctt tcctgggcag agggcagagt gaggccacct ggcgggggtg ctgggcgcct 1260

ggcacatgtg tggggaagcc ggtcacatgg acacacctgt gcacacatgc ctacaggcca 1320

gctctgtgcc aagggcaacc taggtaaaac gaaagccgtc aggggcagtg ggcggcttcc 1380

cggctgacca cagtggcttg gactgtgagg gtagagtagg ctcgctttgc tttcctgaga 1440
agatgcggtg gctgcctatg ttctcagagc gggtctggga agattcagaa tgtccggtcc 1500
ctgtggtgtt gccaggcaag agacacgaag tgccgagaca ctcctcgcct caccgcgtga 1560
cagagcctct gcccggccct cccgttcgcc cgtcctcact agctgcaccc tgtttgctcg 1620
cagacctccc attgccacag cccaagcacc ttcttcaact ctcccaaaat ggctcagcct 1680
aacctctcct ggccaatccc ccccgccgga gagcaggaca ctagggagga cccccagtcc 1740
tgcagtgtct gtgggggttt ctctgccagc agggggctga gcagagccca tccaggacac 1800
tccacactgc caggacacac ccaggcggcc cgcccttgcc tgtctgcacc tggggagaag 1860
ccggcgctcc tgctccctcc tggggaggct gacgggtgtg gccacccgct gtcacaatgg 1920
cacactgcca ctgtcccttg gcacgcacac agccacagcc acacgtgtga cctgctgggc 1980
cgtggttctg gagtctacct gcggatgagc ctgcggcagt cctggggaaa cttttccaga 2040
gcctgttagc ccgtggctac ggtcaggctc tggccagggc agagggctgc ccagggccag 2100
gctcacagta caggagggtg gcgaggcccc tccctcactg gcacgcatga gcaccacccg 2160
cctccccgac tcccaagagt gcacctgctg cggccacagc tccgtggaag gactccccct 2220
acctgagcag agcagaagcc ccagggcgga gctcccagcc agcatggtcc gctgagggct 2280
ggggggcggt ctccgaggcc cctcaacaga gaagcctcca cctgaggatg gggaggacct 2340
ggcaggcagc ttccacggca gggctgggaa gttcagtgcc tggaaataaa gagcaaggaa 2400
aaatggacct caggcttcgt ggctccttta ggatgtcacc tcaccggcct ggggaaggcg 2460
gggggtgccc aagcccagcc ctgtgccccc gctgaacctg gctggaccgc gtgtgaaagg 2520
cagaactaac gtgcggaaac atttgaaaac aactctgaat gtgcggttcg gaatcacccg 2580
atcacagacg agcggtcacc ggaatcgccc ggtcacagac gagcagtcat cggactcacc 2640
cgatcacaga cgagcggtca ccggaatcgc ccgatcacag acgagcggcc accggaatcg 2700
cccaatcaca gacaagcagt catcggaatc acccgatcac agacgagcag tcatcggact 2760
cacccgatca cagacgagcg gtcaccagac tcgcccgatc acagacgagc agtcatcgga 2820
atcacccgat cacagacgag cagtcatcgg actcacccga tcacagacga gcggtcacca 2880
gaatcgcccg atcacagacg agcagtcatc ggaatcaccc gatcacagac gagtggccac 2940
cggaatcacc cgataacagc ccatcacaac tccaaagccc ttgtgttgaa aaggccgagg 3000
acgagtggtc accaaacagg gtggctcccc aggtcccgaa gcctgagacc cggaaggccc 3060
tggcaccctt acaccctcgg actcctgccc tcctcggcct ccctggcccc agcgcggctc 3120
caccctgggc tgcgtctcct ggtcacaggc tgcgtttctc ctttctgtcc gtgggcagcc 3180

cagtccccac agtcacggcc aagccacgca gaacgaacat gactccagag gacctcgccc 3240
tggagctgag cctggcgccg ggtcaggacg gagggaaggg cgggttgggg tccgcgggtc 3300
ctcacaccgc acggcaggca cagaggctcg ccaggccctg atccggtctg tggggacgag 3360
ggacactgag gagaggtgct gggcaccagg acgctgcctc ctggtccctg gttggcctca 3420
gacaagcacg gcctcgagaa aagagccaag cgcatcggga gcacaccaga aaccggccct 3480
gagcacgaga agagcctccg cccggcccgg gcaccacccg acctcgcagg gagcaggccc 3540
tgtcaccgac gggtcacctc gcccacacgg ccagcaccga ctcaccacag cccttcccag 3600
acctggctgg agtggccgga gcggcggggc tcatggctcc catcttggcc cctggaggtg 3660
agctcattca cagaagtggt cccttcactc tgagagagaa aatcgtggcg tgcatcccaa 3720
accctaggcc acgcctgtgg gtttcgtgaa tgagatcgag gctgctgtgg caccctgccc 3780
gtcctggcct ggagcaccct gggatcctgg agggagaggc cccacgcccc cactctccct 3840
ccacacttcc agggttggtg cccacgagtt agaggcacgg cctcccccag cggccctcag 3900
gcttttctca gacatgcggg agccaggaga gcacccttct ccactcagct ccaaagcgaa 3960
tctttgaaaa cacccactcg gctcccatct ctgtcaccta gccaggaggg gtagcaaaaa 4020
taaagtcacg aggacatagt ggtcaccact gtcagttaca acttgtctgt ggaatccgta 4080
attgcatctg tgtgccgcct ccgaacacag aacattgttt ggacggcagc cccactgcac 4140
ataacagacc cgtgcatctt cctcagtcag tttctgaata ttgtgaattc aggcaggtgt 4200
gtgttctctt ctgcatgttt ttatgcactg ccaattagct tctactaacc acggttcaac 4260
agaaaataaa tgtgtatttg tgaataacaa actgcacaac ctgcaaacca ggagagaggg 4320
acaggttctg tcaggggtga caccaggaca cagggacagg ttctgtcggg ggtgacacca 4380
ggacacaggg acaggttctg tcatgggtga cacgaggaca cagggacagg ttctatcatg 4440
ggtgacacca ggagagaggg acaggttctg ttgggggtga caagaggaga cagggacagg 4500
ttctgtcggg ggtgacacca ggagagaggg acaggttctg tcaggggtga caccaggaga 4560
gagggacagg ttctgttggg ggtgacacca ggacacagga ataggttctg tcgggaggac 4620
agtgctgatc gtgtctcagc atcaggaaag gagaaaggca gagggagagc gctgagaaga 4680
ctgttcacgc cagagtgctt atttattttt aatttactgc tataggataa gcaaccaggt 4740
agtgttccta acaattagcg ttaccaaaat taaagttcaa attatatgtt taaaatattg 4800
tagaagatat atatttatac tggactactt ttacaccttc taatatcctg tccaagtttg 4860
ggcgcagatg gtggagttgg gctggcatca tgtcctgtgg ccgcccccact tgcctgttgg 4920

tgccactcca tcccgggccc cagggatgcc agctcagggc tgaccacagc agccctgcgt 4980

gggcatcacc tcctacccca gcccccatcc tgggctgct 5019

<210> 5
<211> 1155
<212> DNA
<213> Human

<400> 5
atggattgca gtaacggatc ggcagagtgt accggagaag gaggatcaaa agaggtggtg 60

gggactttta aggctaaaga cctaatagtc acaccagcta ccattttaaa ggaaaaacca 120

gaccccaata atctggtttt tggaactgtg ttcacggatc atatgctgac ggtggagtgg 180

tcctcagagt ttggatggga gaaacctcat atcaagcctc ttcagaacct gtcattgcac 240

cctggctcat cagctttgca ctatgcagtg gaattatttg aaggattgaa ggcatttcga 300

ggagtagata ataaaattcg actgtttcag ccaaacctca acatggatag aatgtatcgc 360

tctgctgtga gggcaactct gccggtattt gacaaagaag agctcttaga gtgtattcaa 420

cagcttgtga aattggatca agaatgggtc ccatattcaa catctgctag tctgtatatt 480

cgtcctgcat tcattggaac tgagccttct cttggagtca agaagcctac caaagccctg 540

ctctttgtac tcttgagccc agtgggacct tatttttcaa gtggaacctt taatccagtg 600

tccctgtggg ccaatcccaa gtatgtaaga gcctggaaag gtggaactgg ggactgcaag 660

atgggaggga attacggctc atctcttttt gcccaatgtg aagacgtaga taatgggtgt 720

cagcaggtcc tgtggctcta tggcagagac catcagatca ctgaagtggg aactatgaat 780

ctttttcttt actggataaa tgaagatgga gaagaagaac tggcaactcc tccactagat 840

ggcatcattc ttccaggagt gacaaggcgg tgcattctgg acctggcaca tcagtggggt 900

gaatttaagg tgtcagagag atacctcacc atggatgact tgacaacagc cctggagggg 960

aacagagtga gagagatgtt tagctctggt acagcctgtg ttgtttgccc agtttctgat 1020

atactgtaca aaggcgagac aatacacatt ccaactatgg agaatggtcc taagctggca 1080

agccgcatct tgagcaaatt aactgatatc cagtatggaa gagaagagag cgactggaca 1140

attgtgctat cctga 1155

<210> 6
<211> 2717
<212> DNA
<213> Human

<400> 6
cagggtaacg ctgtcttgtg gacccgcact tcccacccga gacctctcac tgagcccgag 60

ccgcgcgcga catgagccac gggaagggaa ccgacatgct cccggagatc gccgccgccg 120
tgggcttcct ctccagcctc ctgaggaccc ggggctgcgt gagcgagcag aggcttaagg 180
tcttcagcgg ggcgctccag gaggcactca cagagcacta caaacaccac tggtttcccg 240
aaaagccgtc caagggctcc ggctaccgct gcattcgcat caaccacaag atggaccccа 300
tcatcagcag ggtggccagc cagatcggac tcagccagcc ccagctgcac cagctgctgc 360
ccagcgagct gaccctgtgg gtggacccct atgaggtgtc ctaccgcatt ggggaggacg 420
gctccatctg cgtcttgtac gaggaggccc cactggccgc ctcctgtggg ctcctcacct 480
gcaagaacca agtgctgctg ggccggagca gcccctccaa gaactacgtg atggcagtct 540
ccagctaggc ccttccgccc ccgccctggg cgccgccgtg ctcatgctgc cgtgacaaca 600
ggccaccaca tacctcaacc tggggaactg tatttttaaa tgaagagcta tttatatata 660
ttattttttt ttaagaaagg aggaaaagaa accaaaagtt tttttaaga aaaaaaatcc 720
ttcaagggag ctgcttggaa gtggcctccc caggtgcctt tggagagaac tgttgcgtgc 780
ttgagtctgt gagccagtgt ctgcctatag gagggggagc tgttaggggg tagacctagc 840
caaggagaag tgggagacgt ttggctagca ccccaggaag atgtgagagg gagcaagcaa 900
ggttagcaac tgtgaacaga gaggtcggga tttgccctgg gggaggaaga gaggccaagt 960
tcagagctct ctgtctcccc cagccagaca cctgcatccc tggctcctct attactcagg 1020
ggcattcatg cctggactta aacaatacta tgttatcttt tcttttattt ttctaatgag 1080
gtcctgggca gagagtgaaa aggcctctcc tgattcctac tgtcctaagc tgcttttctt 1140
gaaatcatga cttgtttcta attctaccct caggggcctg tagatgttgc tttccagcca 1200
ggaatctaaa gctttgggtt ttctgagggg gggaggaggg aactggaggt tattggggtt 1260
aggatggaag ggaactctgc acaaaacctt tgctttgcta gtgctgcttt gtgtgtatgt 1320
gtggcaaata atttgggggt gatttgcaat gaaattttgg gacccaaaga gtatccactg 1380
gggatgtttt ttggccaaaa ctcttccttt tggaaccaca tgaaagtctt gatgctgctg 1440
ccatgatccc tttgagaggt ggctcaaaag ctacagggaa ctccaggtcc tttattactg 1500
ccttcttttc aaaagcacaa ctctcctcta accctcccct ccccсttccc ttctggtcgg 1560
gtcatagagc taccgtattt tctaggacaa gagttctcag tcactgtgca atatgccccc 1620
tgggtcccag gagggtctgg aggaaaactg gctatcagaa cctcctgatg ccctggtggg 1680
cttagggaac catctctcct gctctccttg ggatgatggc tggctagtca gccttgcatg 1740
tattccttgg ctgaatggga gagtgcccca tgttctgcaa gactacttgg tattcttgta 1800

gggccgacac taaataaaag ccaaaccttg ggcactgttt tttctccctg gtgctcagag 1860

cacctgtggg aaaggttgct gtctgtctca gtacaatcca aatttgtcgt agacttgtgc 1920

aatatatact gttgtgggtt ggagaaaagt ggaaagctac actgggaaga aactcccttc 1980

cttcaatttc tcagtgacat tgatgagggg tcctcaaaag acctcgagtt tcccaaaccg 2040

aatcacctta agaaggacag ggctagggca tttggccagg atggccaccc tcctgctgtt 2100

gcccttagt gaggaatctt caccccactt cctctacccc caggttctcc tccccacagc 2160

cagtcccctt tcctggattt ctaaactgct caattttgac tcaaaggtgc tatttaccaa 2220

acactctccc tacccattcc tgccagctct gcctcctttt caactctcca cattttgtat 2280

tgccttccca gacctgcttc cagtctttat tgctttaaag ttcactttgg gcccacagac 2340

ccaagagcta attttctggt ttgtgggttg aaacaaagct gtgaatcact gcaggctgtg 2400

ttcttgcatc ttgtctgcaa acaggtccct gcctttttag aagcagcctc atggtctcat 2460

gcttaatctt gtctctcttc tcttctttat gatgttcact ttaaaaacaa caaaacccct 2520

gagctggact gttgagcagg cctgtctctc ctattaagta aaaataaata gtagtagtat 2580

gtttgtaagc tattctgaca gaaaagacaa aggttactaa ttgtatgata gtgtttttat 2640

atggaagaat gtacagctta tggacaaatg tacacctttt tgttacttta ataaaaatgt 2700

agtaggataa aaaaaaa 2717

<210> 7
<211> 2249
<212> DNA
<213> Human

<400> 7
ctcctctaca aagaggtgga cagagaagac agcagagacc atgggacccc cctcagcccc 60

tccctgcaga ttgcatgtcc cctggaagga ggtcctgctc acagcctcac ttctaacctt 120

ctggaaccca cccaccactg ccaagctcac tattgaatcc acgccattca atgtcgcaga 180

ggggaaggag gttcttctac tcgcccacaa cctgccccag aatcgtattg gttacagctg 240

gtacaaaggc gaaagagtgg atggcaacag tctaattgta ggatatgtaa taggaactca 300

acaagctacc ccagggcccg catacagtgg tcgagagaca atatacccca atgcatccct 360

gctgatccag aacgtcaccc agaatgacac aggattctat accctacaag tcataaagtc 420

agatcttgtg aatgaagaag caaccggaca gttccatgta tacccggagc tgcccaagcc 480

ctccatctcc agcaacaact ccaaccccgt ggaggacaag gatgctgtgg ccttcacctg 540

tgaacctgag gttcagaaca caacctacct gtggtgggta aatggtcaga gcctcccggt 600

cagtcccagg ctgcagctgt ccaatggcaa catgaccctc actctactca gcgtcaaaag 660

gaacgatgca ggatcctatg aatgtgaaat acagaaccca gcgagtgcca accgcagtga 720

cccagtcacc ctgaatgtcc tctatggccc agatgtcccc accatttccc cctcaaaggc 780

caattaccgt ccaggggaaa atctgaacct ctcctgccac gcagcctcta acccacctgc 840

acagtactct tggtttatca atgggacgtt ccagcaatcc acacaagagc tctttatccc 900

caacatcact gtgaataata gcggatccta tatgtgccaa gcccataact cagccactgg 960

cctcaatagg accacagtca cgatgatcac agtctctgga agtgctcctg tcctctcagc 1020

tgtggccacc gtcggcatca cgattggagt gctggccagg gtggctctga tatagcagcc 1080

ctggtgtatt ttcgatattt caggaagact ggcagattgg accagaccct gaattcttct 1140

agctcctcca atcccatttt atcccatgga accactaaaa acaaggtctg ctctgctcct 1200

gaagccctat atgctggaga tggacaactc aatgaaaatt taaagggaaa accctcaggc 1260

ctgaggtgtg tgccactcag agacttcacc taactagaga cagtcaaact gcaaaccatg 1320

gtgagaaatt gacgacttca cactatggac agcttttccc aagatgtcaa aacaagactc 1380

ctcatcatga taaggctctt acccccttt aatttgtcct tgcttatgcc tgcctctttc 1440

gcttggcagg atgatgctgt cattagtatt tcacaagaag tagcttcaga gggtaactta 1500

acagagtgtc agatctatct tgtcaatccc aacgttttac ataaaataag agatccttta 1560

gtgcacccag tgactgacat tagcagcatc tttaacacag ccgtgtgttc aaatgtacag 1620

tggtcctttt cagagttgga cttctagact cacctgttct cactccctgt tttaattcaa 1680

cccagccatg caatgccaaa taatagaatt gctccctacc agctgaacag ggaggagtct 1740

gtgcagtttc tgacacttgt tgttgaacat ggctaaatac aatgggtatc gctgagacta 1800

agttgtagaa attaacaaat gtgctgcttg gttaaaatgg ctacactcat ctgactcatt 1860

ctttattcta ttttagttgg tttgtatctt gcctaaggtg cgtagtccaa ctcttggtat 1920

taccctccta atagtcatac tagtagtcat actccctggt gtagtgtatt ctctaaaagc 1980

tttaaatgtc tgcatgcagc cagccatcaa atagtgaatg gtctctcttt ggctggaatt 2040

acaaaactca gagaaatgtg tcatcaggag aacatcataa cccatgaagg ataaaagccc 2100

caaatggtgg taactgataa tagcactaat gctttaagat ttggtcacac tctcacctag 2160

gtgagcgcat tgagccagtg gtgctaaatg ctacatactc caactgaaat gttaaggaag 2220

aagatagatc caaaaaaaaa aaaaaaaaa 2249

<210> 8
<211> 3583

<212> DNA
<213> Human

<400> 8
gcttctaaag tgaagattca gttttcactt aaacaaccag caagtcttga agtctcttcc 60

caagcaaatg ggagcttctt tggaccttgg agcacacaga ggattctact ttctttaaaa 120

ctttgttttc aggcaatttc cctgagaacc gtttacttcc agaagattgg tggagcttga 180

tctgaaggct ggccatgaaa tctcaaggtc aacattggta ttccagttca gataaaaact 240

gtaaagtgag ctttcgtgag aagcttctga ttattgattc aaacctgggg gtccaagatg 300

tggagaacct caagtttctc tgcataggat tggtccccaa caagaagctg gagaagtcca 360

gctcagcctc agatgttttt gaacatctct tggcagagga tctgctgagt gaggaagacc 420

ctttcttcct ggcagaactc ctctatatca tacggcagaa gaagctgctg cagcacctca 480

actgtaccaa agaggaagtg gagcgactgc tgcccacccg acaaagggtt tctctgttta 540

gaaacctgct ctacgaactg tcagaaggca ttgactcaga gaacttaaag gacatgatct 600

tccttctgaa agactcgctt cccaaaactg aaatgacctc cctaagtttc ctggcatttc 660

tagagaaaca aggtaaaata gatgaagata atctgacatg cctggaggac ctctgcaaaa 720

cagttgtacc taaacttttg agaaacatag agaaatacaa aagagagaaa gctatccaga 780

tagtgacacc tcctgtagac aaggaagccg agtcgtatca aggagaggaa gaactagttt 840

cccaaacaga tgttaagaca ttcttggaag ccttaccgag ggcagctgtg tacaggatga 900

atcggaacca cagaggcctc tgtgtcattg tcaacaacca cagctttacc tccctgaagg 960

acagacaagg aacccataaa gatgctgaga tcctgagtca tgtgttccag tggcttgggt 1020

tcacagtgca tatacacaat aatgtgacga aagtggaaat ggagatggtc ctgcagaagc 1080

agaagtgcaa tccagcccat gccgacgggg actgcttcgt gttctgtatt ctgacccatg 1140

ggagatttgg agctgtctac tcttcggatg aggccctcat tcccattcgg gagatcatgt 1200

ctcacttcac agccctgcag tgccctagac tggctgaaaa acctaaactc tttttcatcc 1260

aggcctgcca aggtgaagag atacagcctt ccgtatccat cgaagcagat gctctgaacc 1320

ctgagcaggc acccacttcc ctgcaggaca gtattcctgc cgaggctgac ttcctacttg 1380

gtctggccac tgtcccaggc tatgtatcct ttcggcatgt ggaggaaggc agctggtata 1440

ttcagtctct gtgtaatcat ctgaagaaat tggtcccaag acatgaagac atcttatcca 1500

tcctcactgc tgtcaacgat gatgtgagtc gaagagtgga caaacaggga acaaagaaac 1560

agatgcccca gcctgctttc acactaagga aaaaactagt attccctgtg cccctggatg 1620

cactttcaat atagcagaga gtttttgttg gttcttagac ctcaaacgaa tcattgggta 1680

taacctccag cctcctgccc agcacaggaa tcggtggtct ccacctgtca ttctagaaac 1740
aggaaacacc gtgttttctg acacagtcaa ttctgatttt ctttttcttt tgcaagtcta 1800
aatgttagaa aactttcttt ttttggagat agtctcattc tgtcacccag actggagtgc 1860
agggggcaa tcacggctca ctgtagtctc gacctcccag gctcaagctg tcctcccacc 1920
tcagcctccc aagtagctga gactacaggt gtgtgtccat gcacagctaa ctttttattt 1980
tttttgtgga gatggggttt cactatgttg cctaagctgg tctcaaactc ctgggctcaa 2040
gcgatcctcc cacctcagct tctcaaagtt ctgggactac aggcatgaaa tactgtgcct 2100
ggcctgggga ccaggtgcat tttaaggttc cttggtgttc aaaaaccacg ttcttagcct 2160
agattgagct tagattgcct ctctagacaa ctacccctta gttataattc tgtgtcccct 2220
ctgcatgccc ttaaacattg gacagtgagg tcacagtcca cccaccctct ctctgatctc 2280
ccccttccta agacttctct tttgcacatc tagtgaggtg aaaatttggt ctatgccagg 2340
cccatttcct gcttttgtgt aaggaaggtg ctcacatagg aagtttttat ttggttagag 2400
acaggtttcc ctgtaggaag atgatggctc atttacactc agctgctctg caagcagaaa 2460
ctttacaacc tgatgtcata ttccattttg gactgggtgc ggtgactcat gcctgtaatc 2520
ccagtactct gggaagccaa ggcaggcaga tcacttgagg tcaggagttc gagaccagcc 2580
tggccaatac ggcaaaacct catcattact aaaaacacaa aaattagcca ggtgtggcgg 2640
cgagcacctg taatcccagc tactcgggag gctgagacag gagaatctct tgaatccagg 2700
aggcagaggc tgtggtgagc caagatgaca caactgcact ccagcttggg caacagggcg 2760
agaccttgtt taaaaaaaaa attcaatatt ggggttggaa catttcagtt gccattgaca 2820
gaacacccaa ttcaaattga ctgaagcaaa gaagggaatt tattgcctct ttcacattga 2880
aacccaggag tggataacac tggcttcagg caaagcttga atcaggactc aatctacagg 2940
ccagcacctt tctcttggcc ggatgtcctc agggctggca gatgcagtag actgcagtgg 3000
acagtcccca ccttgttact gctactacac tttgctcctc tggcccaagg catgaggaga 3060
gaggctgtgt cagaaactga agctgttctc aggatcactg ggctcttctt ggcagagggg 3120
atgtctggct tgcctgaagg gagtggctct gtaaggacgc cttgatgctt tcttcattaa 3180
gattttgagc atttttacgt acttgagctt tttttttttt ttttttcaat ttctagagga 3240
actttttctc tgttaattcc tggaactgta ttttgaatcc ttaaaggtga gccctcatag 3300
ggagatccaa agtcctgtgg ttaacgcctt catttataga tgaggcagct gaggcctggg 3360
gatgtgaaca acctgctcac agtcctcatt tactggattt gacttcagcc aggtgaactg 3420

gaatgccttg gggcgtggaa gggcattagg agtgtttcat ttgatatgtg aatgctcata 3480

aaaaaatgtc aaggaatgaa gaacaacaac tctcagtggt gcctgcattt ataattattt 3540

atgtgaaagt caaattcatg tacagtaaat ttgttataag aat 3583

<210> 9
<211> 5516
<212> DNA
<213> Human

<400> 9
ccggccggaa ttccggctgg atttcctccc ggacatgacg gtcgagggcc gcctgctcgt 60

tcctgacaga attaacggca cagccaacaa gatgaacgga gctttggatc actcagacca 120

accagaccca gatgccatta agatgtttgt cggacagatc cccggtcat ggtcggaaaa 180

ggagctgaaa gaactttttg agccttacgg agccgtctac cagatcaacg tcctccggga 240

ccggagtcag aaccctccgc agagtaaagg ttgttgtttc gtaacatttt atacaagaaa 300

agctgcactt gaggcccaga atgcactgca caatattaaa actttacctg ggatgcatca 360

tcccattcag atgaaacctg cagatagtga aaagtccaac gctgtggaag acagaaaatt 420

gttcatagga atggtttcga agaaatgtaa tgagaacgac atcagggtga tgttctctcc 480

atttggccag atagaagaat gccggatcct ccggggacct gatgggctga gtcgaggctg 540

tgcgtttgtc acattttcta caagggcaat ggcacagaat gcaatcaaag ccatgcatca 600

gtctcagacc atggagggct gctcttcacc tatcgtggtg aagtttgctg acactcagaa 660

ggacaaagag caaaggcgcc tccagcagca gctcgctcag cagatgcagc agctcaacac 720

tgccacctgg gggaacctga cagggctggg cggactgacc ccacagtatc tggcgctcct 780

gcagcaggcc acctcctcca gcaacctggg tgcgttcagc ggcattcaac aaatggcagg 840

catgaatgct ttacagttgc agaacctggc gacgctggct gctgctgcag ctgcggccca 900

gacctcagcc accagcacca atgcaaaccc tctctctacc acgagcagcg ccctgggagc 960

cctcacgagt cccgtggctg cttcaacccc caactccact gctggtgcag ccatgaactc 1020

cttgacctct ctcgggactc tgcaaggact ggctggagcc actgttggac tgaataatat 1080

taatgcacta gcagttgctc aaatgctctc aggtatggcg gctctgaatg gaggacttgg 1140

cgccacaggc ttgacgaatg gcacggctgg caccatggac gccctcaccc aggcctactc 1200

aggaattcaa cagtacgcag ccgccgcgct gcccactctg tacagccaga gcctgctgca 1260

gcagcagagc gctgcaggca gccagaagga aggtccagag ggggcaaacc tctttattta 1320

ccaccttcca caggaatttg gagaccagca cattctgcag atgttcatgc cttttggaaa 1380

tgttatctct gctaaagtct tcattgacaa acagaccaat ctgagcaagt gctttggttt 1440
tgttagctac gacaatccag tctctgcaca agctgctatc caagctatga atggctttca 1500
gatcggcatg aaacgcttga aggtgcagct gaagcgttcc aaaaacgaca gcaaacctta 1560
ctgatcctaa ccccagaggc tccctgctct cattttagct ttcttaggac atcttcatgc 1620
ccgttagttc atcgtttgcc tagcatgtcc ctgtggcgtc tcaaaaaaaa gtttcatcgt 1680
cccgtcattg tttctgatgt ctttctgacc tcacatcata tttggttctc ctactgacct 1740
ttgatctagt ttgacctttg aaatttgcat gtgacctcat ctagctatga attctgggaa 1800
gtcaatgtga aaaacattgc tgcattcatg caagactgaa atttattatt agacaaattc 1860
attatagaaa aaacctgtgg caaaaacgtt tctttcttat ttttttcttt ttcctaaaac 1920
agacttgaaa gtattataca gggattggca ttcttcccgg tcactggtaa caatagcaat 1980
atgtgtccag ggacacagaa tgttggtttc taacagacta cttccaaaaa cagtttgaga 2040
aaaaaactgt ctgattttaa gtctctagag gtctgtaata gtttttacat ttttcaggca 2100
gtgtaaagtt ttttgataag gccattttag gtggctcact ttctcattaa gatatatata 2160
tagaaccact ttttgtagat tagtataaga aaaatattta ccctgttttg gggcaaatgc 2220
tacctatttg tgtcaccttt tgctgaactc acagttagac aatccatggt ttaatgcaca 2280
tgaaattacc tatattttat actgtttcaa tgtacaggag aaaggttact gtaaactgtg 2340
ttatgttggt gcttctgtga attaagttgt ggtttcatca tgagtcttaa tgttctttgt 2400
tgataagaca agtttagaat tggtttactt aatacaaaaa aaaaaaaaag aatttcaaaa 2460
aaaaaagttg tttgcttaaa aaaaatttca tgtgagggaa aaaaaaaaaa acctattcca 2520
gaataagttt tgtgttggct tgtgaagcat tgatgtcatt tttttttaatt gtggactatt 2580
tagatgtgtt tgtgttcagc aaaatgtgat ctgttttttt cttttaaaga aaaaaagtga 2640
aaatatatag tgccaaattc caaaggtact tccttcctag agcttcagtg tgtttcttgt 2700
gagaagtaat ttgataacat gggtatttta ttatgtgttt tgtataaatc cctaatattt 2760
aaaaaaaaaa acaaaacaaa aaaaggttac aaagtttgtt aacttgctat cctgtggtct 2820
tgttgcctga aattgttatt gtttgttatt tctctctgat gtttttttgta agacattgta 2880
taagtgccca tgtcccactt ttttaaccac tccgcacatc agtgctgtga aggcaacctc 2940
accatgtatt ttcttcataa tctatggaaa cctctaaggt gagaaagttt tgaactttta 3000
accctttcta cccagagcta tctggaatgt tgatgacttt ttatactgtc atgatttgag 3060
tttgttttgg ggtgtttcca atttggattt ttttccctgc atctatcctc taagttgttt 3120
cggtttgact actttgttct ttggttaaga tccaaaagaa aacagaaaac aattccacga 3180

ggccaatcta aagggaaaaa atcctacact acttttacta cttttgatta tttctcattt 3240
ttgggaaaag aattcctaat gtgctactag aattccttct tcagttttaa cgagtaattg 3300
gataaacccct gagggaaaac ggaggtagat tcagcaccta acaatcctgt atgcttttga 3360
gatcacgttt agtgctatgt cctagtctag aatattttca tataccttgc agtaaaacca 3420
ctttgtggca ggacagtctc ttgaggggtt ttgtttctgt ttcctaaata ctcctaaata 3480
atatttctaa tcagccatta tgctggggca tctctgatcc cagtaggtac ctctgaatat 3540
accaggtgtc tggagttaga agcccatagc cctttcccag ccttttttggt tttttttaatt 3600
gaacacattt catctaagta aagctcagtt ctttatcaca atttactgac caaataccta 3660
gcaccagttc ctgctgccac tttttaaagt gccatatgac tttctacgaa caggtacctt 3720
gctgtcttga caaatcctaa tgtcacgcct acagccccaa cacaagctcc agtcttcctc 3780
ttcggcatgc cctggaagct tcttggcctc agctcccctt ccccgctcag caccctgtta 3840
ggatcagtgt gtgtggatgg gatagccctg ggatggaaag gactagcctc tactgatgca 3900
aaaaaacaaa aagcaacaca aacgtttcct tcttatagca catgcacttc cttacaatga 3960
catgatttgt attatcctca catgtgttta ctactgctgg ggccttcctt catcctctga 4020
gggctatttt gtactttctg cagcaatcag cttaataaca acacttattg cacctgtctc 4080
tctctgagaa cacggtgtgt ctcgacacgt accacgtaac gtggaaacac aagagcccac 4140
cacttgaatt tctaagacca tttcattctg aaacttctta tcaattacct aaatctcaac 4200
gaaaaacaat ttactgaagc cgactcccct ccccatctcc ctctcaacct caacccacct 4260
gcatgcatct cccccagagg aaaacactga gggtagggga cagggaggct caggacgcgc 4320
cctctgaatc ggagtgtttc ttcttcacaa gtcaccaaga gaggacatga gggggaaagt 4380
ccttttttgc ccttctccaa aaaataacct tccacagaga caaactgtcc ttctatccac 4440
ttttatcttt taataaatat caaaaggaaa aagctgcaag ggtgcaaagg gcctgtgcca 4500
gaagaaaaca cacacaggga aaccgctttt tttaatcaat tgtagagaat agtcattttt 4560
aatctaaatt agagaattgt gatacaatgg cagtcctcaa aggcgtaacg agttcatctt 4620
tctttcacca taggggttat agttggcttg tgctactctg gaatcatttt actgtttgtt 4680
tttattatct taagtgctaa ttaaaaaaaa aataaaattt taaaaaaacc tgtagtttca 4740
ttaccttttt gaataatgtc atacaaaaaa tgtatttgtt tttttgtgct gtgagaattg 4800
atgtttgtag attaataatc attttgttta gaattacaaa atagttttta aatattgtct 4860
gagaaaagcc aaagttaatg caacctagtg gaaactgtaa gaccatttga gtattgtttg 4920

ttttattgat gcatttggat tttgttgttt gatggaattt gagccaaaaa aaaaaatacg 4980

caggctttcc tatttctaca actgattgta cttatgcatt ttgtaccagt ggaacttttt 5040

atactggaga ttaaaaaaaa aatggaaatt tttgtggctt gctctggtgg gcccctgaca 5100

atgactgatt tcaagtttga tttcgggttg attgattgat tgattgatag aaagaaagtt 5160

gcttttcttt tgagaattaa aaactttggc ttgatttctt ttttcccttt gcttatatct 5220

agcattagaa ttttgtctta aaataacagc ggtaagtttc actttttatt ctgtattgtg 5280

cagttacaca ataaggtaat tagatttaga agtactcagt cactttaagt ggataaatgt 5340

attagttaaa actttagggt ttgctttttt gctgtttaga tcaaagtttt ttctgattct 5400

tctgtcctca ttgtgaacat aaccgtgtag ttgaaacagt caaacttatt tttgtaatgt 5460

atgttattgt gtgatgcagt ttttttgctt ctgtctccaa tattaaacca ttttcc 5516

<210> 10
<211> 736
<212> DNA
<213> Human

<400> 10
ggctctcacc ctcctctcct gcagctccag ctttgtgctc tgcctctgag gagaccatgg 60

cccggcctct gtgtaccctg ctactcctga tggctaccct ggctggggct ctggcctcga 120

gctccaagga ggagaatagg ataatcccag gtggcatcta tgatgcagac ctcaatgatg 180

agtgggtaca gcgtgccctt cacttcgcca tcagcgagta caacaaggcc accgaagatg 240

agtactacag acgcccgctg caggtgctgc gagccaggga gcagaccttt ggggggtga 300

attacttctt cgacgtagag gtgggccgca ccatatgtac caagtcccag cccaacttgg 360

acacctgtgc cttccatgaa cagccagaac tgcagaagaa acagttgtgc tctttcgaga 420

tctacgaagt tccctgggag gacagaatgt ccctggtgaa ttccaggtgt caagaagcct 480

aggggtctgt gccaggccag tcacaccgac caccacccac tcccacccac tgtagtgctc 540

ccacccctgg actggtggcc cccaccctgc gggaggcctc cccatgtgcc tgtgccaaga 600

gacagacaga gaaggctgca ggagtccttt gttgctcagc agggcgctct gccctccctc 660

cttccttctt gcttctaata gacctggtac atggtacaca cacccccacc tcctgcaatt 720

aaacagtagc atcgcc 736

<210> 11
<211> 6129
<212> DNA
<213> Human

<400> 11

```
aattggaagc aaatgacatc acagcaggtc agagaaaaag ggttgagcgg caggcaccca    60
gagtagtagg tctttggcat taggagcttg agcccagacg gccctagcag ggacccccagc   120
gcccgagaga ccatgcagag gtcgcctctg gaaaaggcca gcgttgtctc caaacttttt   180
ttcagctgga ccagaccaat tttgaggaaa ggatacagac agcgcctgga attgtcagac   240
atataccaaa tcccttctgt tgattctgct gacaatctat ctgaaaaatt ggaaagagaa   300
tgggatagag agctggcttc aaagaaaaat cctaaactca ttaatgccct tcggcgatgt   360
tttttctgga gatttatgtt ctatggaatc tttttatatt taggggaagt caccaaagca   420
gtacagcctc tcttactggg aagaatcata gcttcctatg acccggataa caaggaggaa   480
cgctctatcg cgatttatct aggcataggc ttatgccttc tctttattgt gaggacactg   540
ctcctacacc cagccatttt tggccttcat cacattggaa tgcagatgag aatagctatg   600
tttagtttga tttataagaa gactttaaag ctgtcaagcc gtgttctaga taaaataagt   660
attggacaac ttgttagtct cctttccaac aacctgaaca aatttgatga aggacttgca   720
ttggcacatt tcgtgtggat cgctcctttg caagtggcac tcctcatggg gctaatctgg   780
gagttgttac aggcgtctgc cttctgtgga cttggtttcc tgatagtcct tgcccttttt   840
caggctgggc tagggagaat gatgatgaag tacagagatc agagagctgg gaagatcagt   900
gaaagacttg tgattacctc agaaatgatt gaaaatatcc aatctgttaa ggcatactgc   960
tgggaagaag caatggaaaa aatgattgaa aacttaagac aaacagaact gaaactgact  1020
cggaaggcag cctatgtgag atacttcaat agctcagcct tcttcttctc agggttcttt  1080
gtggtgtttt tatctgtgct tccctatgca ctaatcaaag gaatcatcct ccggaaaata  1140
ttcaccacca tctcattctg cattgttctg cgcatggcgg tcactcggca atttccctgg  1200
gctgtacaaa catggtatga ctctcttgga gcaataaaca aaatacagga tttcttacaa  1260
aagcaagaat ataagacatt ggaatataac ttaacgacta cagaagtagt gatggagaat  1320
gtaacagcct tctgggagga gggatttggg gaattatttg agaaagcaaa acaaaacaat  1380
aacaatagaa aaacttctaa tggtgatgac agcctcttct tcagtaattt ctcacttctt  1440
ggtactcctg tcctgaaaga tattaatttc aagatagaaa gaggacagtt gttggcggtt  1500
gctggatcca ctggagcagg caagacttca cttctaatga tgattatggg agaactggag  1560
ccttcagagg gtaaaattaa gcacagtgga agaatttcat tctgttctca gttttcctgg  1620
attatgcctg gcaccattaa agaaaatatc atctttggtg tttcctatga tgaatataga  1680
tacagaagcg tcatcaaagc atgccaacta gaagaggaca tctccaagtt tgcagagaaa  1740
```

gacaatatag ttcttggaga aggtggaatc acactgagtg gaggtcaacg agcaagaatt 1800
tctttagcaa gagcagtata caaagatgct gatttgtatt tattagactc tccttttgga 1860
tacctagatg ttttaacaga aaaagaaata tttgaaagct gtgtctgtaa actgatggct 1920
aacaaaacta ggattttggt cacttctaaa atggaacatt taaagaaagc tgacaaaata 1980
ttaattttga atgaaggtag cagctatttt tatgggacat tttcagaact ccaaaatcta 2040
cagccagact ttagctcaaa actcatggga tgtgattctt tcgaccaatt tagtgcagaa 2100
agaagaaatt caatcctaac tgagacctta caccgtttct cattagaagg agatgctcct 2160
gtctcctgga cagaaacaaa aaaacaatct tttaaacaga ctggagagtt tggggaaaaa 2220
aggaagaatt ctattctcaa tccaatcaac tctatacgaa aattttccat tgtgcaaaag 2280
actcccttac aaatgaatgg catcgaagag gattctgatg agcctttaga gagaaggctg 2340
tccttagtac cagattctga gcagggagag gcgatactgc ctcgcatcag cgtgatcagc 2400
actggcccca cgcttcaggc acgaaggagg cagtctgtcc tgaacctgat gacacactca 2460
gttaaccaag gtcagaacat tcaccgaaag acaacagcat ccacacgaaa agtgtcactg 2520
gcccctcagg caaacttgac tgaactggat atatattcaa gaaggttatc tcaagaaact 2580
ggcttggaaa taagtgaaga aattaacgaa gaagacttaa aggagtgcct tttgatgat 2640
atggagagca taccagcagt gactacatgg aacacatacc ttcgatatat tactgtccac 2700
aagagcttaa tttttgtgct aatttggtgc ttagtaattt ttctggcaga ggtggctgct 2760
tctttggttg tgctgtggct ccttggaaac actcctcttc aagacaaagg gaatagtact 2820
catagtagaa ataacagcta tgcagtgatt atcaccagca ccagttcgta ttatgtgttt 2880
tacatttacg tgggagtagc cgacactttg cttgctatgg gattcttcag aggtctacca 2940
ctggtgcata ctctaatcac agtgtcgaaa attttacacc acaaaatgtt acattctgtt 3000
cttcaagcac ctatgtcaac cctcaacacg ttgaaagcag gtgggattct taatagattc 3060
tccaaagata tagcaatttt ggatgacctt ctgcctctta ccatatttga cttcatccag 3120
ttgttattaa ttgtgattgg agctatagca gttgtcgcag ttttacaacc ctacatcttt 3180
gttgcaacag tgccagtgat agtggctttt attatgttga gagcatattt cctccaaacc 3240
tcacagcaac tcaaacaact ggaatctgaa ggcaggagtc caattttcac tcatcttgtt 3300
acaagcttaa aaggactatg gacacttcgt gccttcggac ggcagcctta ctttgaaact 3360
ctgttccaca aagctctgaa tttacatact gccaactggt tcttgtacct gtcaacactg 3420
cgctggttcc aaatgagaat agaaatgatt tttgtcatct tcttcattgc tgttaccttc 3480
atttccattt taacaacagg agaaggagaa ggaagagttg gtattatcct gactttagcc 3540

atgaatatca tgagtacatt gcagtgggct gtaaactcca gcatagatgt ggatagcttg 3600
atgcgatctg tgagccgagt ctttaagttc attgacatgc caacagaagg taaacctacc 3660
aagtcaacca aaccatacaa gaatggccaa ctctcgaaag ttatgattat tgagaattca 3720
cacgtgaaga aagatgacat ctggccctca gggggccaaa tgactgtcaa agatctcaca 3780
gcaaaataca cagaaggtgg aaatgccata ttagagaaca tttccttctc aataagtcct 3840
ggccagaggg tgggcctctt gggaagaact ggatcaggga agagtacttt gttatcagct 3900
tttttgagac tactgaacac tgaaggagaa atccagatcg atggtgtgtc ttgggattca 3960
ataactttgc aacagtggag gaaagccttt ggagtgatac cacagaaagt atttattttt 4020
tctggaacat ttagaaaaaa cttggatccc tatgaacagt ggagtgatca agaaatatgg 4080
aaagttgcag atgaggttgg gctcagatct gtgatagaac agtttcctgg gaagcttgac 4140
tttgtccttg tggatggggg ctgtgtccta agccatggcc acaagcagtt gatgtgcttg 4200
gctagatctg ttctcagtaa ggcgaagatc ttgctgcttg atgaacccag tgctcatttg 4260
gatccagtaa cataccaaat aattagaaga actctaaaac aagcatttgc tgattgcaca 4320
gtaattctct gtgaacacag gatagaagca atgctggaat gccaacaatt tttggtcata 4380
gaagagaaca aagtgcggca gtacgattcc atccagaaac tgctgaacga gaggagcctc 4440
ttccggcaag ccatcagccc ctccgacagg gtgaagctct ttccccaccg gaactcaagc 4500
aagtgcaagt ctaagcccca gattgctgct ctgaaagagg agacagaaga agaggtgcaa 4560
gatacaaggc tttagagagc agcataaatg ttgacatggg acatttgctc atggaattgg 4620
agctcgtggg acagtcacct catggaattg gagctcgtgg aacagttacc tctgcctcag 4680
aaaacaagga tgaattaagt ttttttttaa aaaagaaaca tttggtaagg ggaattgagg 4740
acactgatat gggtcttgat aaatggcttc ctggcaatag tcaaattgtg tgaaaggtac 4800
ttcaaatcct tgaagattta ccacttgtgt tttgcaagcc agattttcct gaaaaccctt 4860
gccatgtgct agtaattgga aaggcagctc taaatgtcaa tcagcctagt tgatcagctt 4920
attgtctagt gaaactcgtt aatttgtagt gttggagaag aactgaaatc atacttctta 4980
gggttatgat taagtaatga taactggaaa cttcagcggt ttatataagc ttgtattcct 5040
ttttctctcc tctccccatg atgtttagaa acacaactat attgtttgct aagcattcca 5100
actatctcat ttccaagcaa gtattagaat accacaggaa ccacaagact gcacatcaaa 5160
atatgcccca ttcaacatct agtgagcagt caggaaagag aacttccaga tcctggaaat 5220
cagggttagt attgtccagg tctaccaaaa atctcaatat ttcagataat cacaatacat 5280

cccttacctg ggaaagggct gttataatct ttcacagggg acaggatggt tcccttgatg 5340

aagaagttga tatgcctttt cccaactcca gaaagtgaca agctcacaga cctttgaact 5400

agagtttagc tggaaaagta tgttagtgca aattgtcaca ggacagccct tctttccaca 5460

gaagctccag gtagagggtg tgtaagtaga taggccatgg gcactgtggg tagacacaca 5520

tgaagtccaa gcatttagat gtataggttg atggtggtat gttttcaggc tagatgtatg 5580

tacttcatgc tgtctacact aagagagaat gagagacaca ctgaagaagc accaatcatg 5640

aattagtttt atatgcttct gttttataat tttgtgaagc aaaatttttt ctctaggaaa 5700

tatttatttt aataatgttt caaacatata ttacaatgct gtattttaaa agaatgatta 5760

tgaattacat ttgtataaaa taatttttat atttgaaata ttgacttttt atggcactag 5820

tatttttatg aaatattatg ttaaaactgg gacaggggag aacctagggt gatattaacc 5880

aggggccatg aatcaccttt tggtctggag ggaagccttg gggctgatcg agttgttgcc 5940

cacagctgta tgattcccag ccagacacag cctcttagat gcagttctga agaagatggt 6000

accaccagtc tgactgtttc catcaagggt acactgcctt ctcaactcca aactgactct 6060

taagaagact gcattatatt tattactgta agaaaatatc acttgtcaat aaaatccata 6120

catttgtgt 6129

<210> 12
<211> 1876
<212> DNA
<213> Human

<400> 12
gagccatgct cgcggcgatg ggctctctgg cggctgccct ctgggcagtg gtccatcctc 60

ggactctcct actgggcact gtcgcctttc tgctcgctgc tgactttctc aaaagacggc 120

gcccaaagaa ctacccgccg gggccctggc gcctgccctt ccttggcaac ttcttccttg 180

tggacttcga gcagtcgcac ctggaggttc agctgtttgt gaagaaatat gggaaccttt 240

ttagcttgga gcttggtgac atatctgcag ttcttattac tggcttgccc ttaatcaaag 300

aagcccttat ccacatggac caaaactttg ggaaccgccc cgtgacccct atgcgagaac 360

atatctttaa gaaaaatgga ttgattatgt caagtggcca ggcatggaag gagcaaagaa 420

ggttcactct gacagcacta aggaactttg gtttaggaaa gaagagctta gaggaacgca 480

ttcaggagga ggcccaacac ctcactgaag caataaaaga ggagaacgga cagccttttg 540

accctcattt caagatcaac aatgcagttt ccaatatcat ttgctccatc accttcggag 600

aacgctttga gtaccaggat agttggtttc agcagctgct gaagttacta gatgaagtca 660

catacttgga ggcttcaaag acatgccagc tctacaatgt ctttccatgg ataatgaaat 720

tcctgcctgg accccaccaa actctcttca gcaactggaa aaaactgaaa ttgtttgttt 780

ctcatatgat tgacaaacac agaaaggatt ggaatcctgc agaaacaaga gactttattg 840

atgcttacct taaagaaatg tcaaagcaca caggcaatcc tacttcaagt ttccatgaag 900

aaaacctcat ctgcagcacc ctggacctct tctttgccgg aaccgagaca acttccacaa 960

ctctgcgatg ggctctgctt tatatggccc tctacccaga aatccaagaa aaagtacaag 1020

ctgagattga cagagtgatt ggccaggggc agcagccgag cacagccgcc cgggagtcca 1080

tgccctacac caatgctgtc atccatgagg tgcagagaat gggcaacatc atccccctga 1140

acgttcccag ggaagtgaca gttgatacca ctttggctgg gtaccacctg cccaagggta 1200

ccatgatcct gaccaatttg acggcgctgc acagggaccc cacagagtgg gccacccctg 1260

acacattcaa tccggaccat tttctggaga atggacagtt taagaaaagg gaagccttta 1320

tgcctttctc aataggaaag cgggcatgcc tcggagaaca gttggccagg actgagctgt 1380

ttattttctt cacttccctt atgcaaaaat ttaccttcag gcccccaaac aatgagaagc 1440

tgagcctgaa gtttagaatg ggtatcacca tttccccagt cagtcaccgc ctctgcgctg 1500

ttcctcaggt gtaatattgt taagaaagaa aggggcaagg aaagtaagaa gacatggcac 1560

gtgttctgaa accactggtg tctgctcaga tgtgttggga caaaatgaaa gtgactttca 1620

agaaagatca gaggaatttg actcagagaa aactagatcc aaatcccagc tctactgtct 1680

cgtccgaatt agccttggga aaatcattta tatgctaaat aatttacctt tttatctagg 1740

agatgaaaag aggataatgt ttccttccat aaagaaagtt cttgtaagaa tcaaaagaaa 1800

tggtgagctt taagtggttt gtaaaccata aaacacatca taaaagttct atctataaaa 1860

aaaaaaaaaa aaaaaa 1876

<210> 13
<211> 2375
<212> DNA
<213> Human

<400> 13
atgaagacac cgtggagggt tctcctggga ctgctgggtg ctgctgcgct tgtcaccatc 60

atcaccgtgc ccgtggttct gctgaacaaa ggcacagatg atgctacagc tgacagtcgc 120

aaaacttaca ctctaactga ttacttaaaa aatacttata gactgaagtt atactcctta 180

agatggattt cagatcatga atatctctac aaacaagaaa ataatatctt ggtattcaat 240

gctgaatatg gaaacagctc agttttcttg gagaacagta catttgatga gtttggacat 300

tctatcaatg attattcaat atctcctgat gggcagttta ttctcttaga atacaactac 360
gtgaagcaat ggaggcattc ctacacagct tcatatgaca tttatgattt aaataaaagg 420
cagctgatta cagaagagag gattccaaac aacacacagt gggtcacatg gtcaccagtg 480
ggtcataaat tggcatatgt ttggaacaat gacatttatg ttaaaattga accaaattta 540
ccaagttaca gaatcacatg gacggggaaa gaagatataa tatataatgg aataactgac 600
tgggtttatg aagaggaagt cttcagtgcc tactctgctc tgtggtggtc tccaaacggc 660
actttttag catatgccca atttaacgac acagaagtcc cacttattga atactccttc 720
tactctgatg agtcactgca gtacccaaag actgtacggg ttccatatcc aaaggcagga 780
gctgtgaatc caactgtaaa gttctttgtt gtaaatacag actctctcag ctcagtcacc 840
aatgcaactt ccatacaaat cactgctcct gcttctatgt tgataggga tcactacttg 900
tgtgatgtga catgggcaac acaagaaaga atttctttgc agtggctcag gaggattcag 960
aactattcgg tcatggatat ttgtgactat gatgaatcca gtggaagatg gaactgctta 1020
gtggcacggc aacacattga aatgagtact actggctggg ttggaagatt taggccttca 1080
gaacctcatt ttacccttga tggtaatagc ttctacaaga tcatcagcaa tgaagaaggt 1140
tacagacaca tttgctattt ccaaatagat aaaaaagact gcacatttat tacaaaaggc 1200
acctgggaag tcatcgggat agaagctcta accagtgatt atctatacta cattagtaat 1260
gaatataaag gaatgccagg aggaaggaat ctttataaaa tccaacttag tgactataca 1320
aaagtgacat gcctcagttg tgagctgaat ccggaaaggt gtcagtacta ttctgtgtca 1380
ttcagtaaag aggcgaagta ttatcagctg agatgttccg gtcctggtct gcccctctat 1440
actctacaca gcagcgtgaa tgataaaggg ctgagagtcc tggaagacaa ttcagctttg 1500
gataaaatgc tgcagaatgt ccagatgccc tccaaaaaat tggacttcat tattttgaat 1560
gaaacaaaat tttggtatca gatgatcttg cctcctcatt ttgataaatc caagaaatat 1620
cctctactat tagatgtgta tgcaggccca tgtagtcaaa aagcagacat tgtcttcaga 1680
ctgaactggg ccacttacct tgcaagcaca gaaaacatta tagtagctag ctttgatggc 1740
agaggaagtg gttaccaagg agataagatc atgcatgcaa tcaacagaag actgggaaca 1800
tttgaagttg aagatcaaat tgaagcagcc agacaatttt caaaaatggg atttgtggac 1860
aacaaacgaa ttgcaatttg gggctggtca tatggagggt acgtaacctc aatggtcctg 1920
ggatcgggaa gtggcgtgtt caagtgtgga atagccgtgg cgcctgtatc ccggtgggag 1980
tactatgagt cagtgtacac agaacgttac atgggtctcc caactccaga agacaacctt 2040
gaccattaca gaaattcaac agtcatgagc agagctgaaa attttaaaca agttgagtac 2100

ctccttattc atggaacagc agatgataac gttcactttc agcagtcagc tcagatctcc 2160

aaagccctgg tcgatgttgg agtggatttc caggcaatgt ggtatactga tgaagaccat 2220

ggaatagcta gcagcacagc acaccaacat atatataccc acatgagcca cttcataaaa 2280

caatgtttct ctttacctta gcacctcaaa atactatgcc atttaaagct tattaaaact 2340

catttttgtt ttcattatct caaaaaaaaa aaaaa 2375

<210> 14
<211> 2248
<212> DNA
<213> Human

<400> 14
cccagcgccc cggaagtgat ctgtggcggc tgctgcagag ccgccaggag gagggtggat 60

ctccccagag caaagcgtcg gagtcctcct cctccttctc ctcctcctcc tcctcctcct 120

ccagccgccc aggctccccc gccacccgtc agactcctcc ttcgaccgct cccggcgcgg 180

ggccttccag gcgacaagga ccgagtaccc tccggccgga gccacgcagc cgcggcttcc 240

ggagccctcg ggcggcggga ctggctcgcg gtgcaggtaa agctccagat ggctctggaa 300

cttatgagga aagagttgga ggacgccttg actcaggagg ccaacgtggg gaaaaagact 360

gtcatttgga aggagaaagt ggaaatgcag aggcagcgct tcagattgga gtttgagaag 420

catcgtggct ttctggccca ggaggagcaa cggcagctga ggcggctgga ggcggaggag 480

cgagcgacgc tgcagagact gcgggagagc aagagccggc tggtccagca gagcaaggcc 540

ctgaaggagc tggcggatga gctgcaggag aggtgccagc gcccagccct gggtctgctg 600

gagggtgtga gaggagtcct gagcagaagt aaggctgtca caaggctgga agcagagaac 660

atccccatgg aactgaagac agcatgctgc atccctggga ggagggagct cttaaggaag 720

ttccaagtgg atgtaaagct ggatcccgcc acggcgcacc cgagtctgct cttgaccgcc 780

gacctgcgca gtgtgcagga tggagaacca tggagggatg tccccaacaa ccctgagcga 840

tttgacacat ggccctgcat cctgggtttg cagagcttct catcagggag gcattactgg 900

gaggttctgg tgggagaagg agcagagtgg ggtttagggg tctgtcaaga cacactgcca 960

agaaaggggg aaaccatgcc atctcctgag aatggggtct gggccctgtg gctgctgaaa 1020

gggaatgagt acatggtcct tgcctcccca tcagtgcctc ttctccaact ggaaagtcct 1080

cgctgcattg ggattttctt ggactatgaa gccggtgaaa tttcattcta caatgtcaca 1140

gatggatctt atatctacac attcaaccaa ctcttctctg gtcttcttcg gccttacttt 1200

ttcatctgtg atgcaactcc tcttatcttg ccacccacga caatagcagg gtcaggaaat 1260

tgggcatcca gggatcattt agatcctgct tctgatgtaa gagatgatca tctctaaaat 1320

tctgttccca agatgcagtc ctagcgtagc gaacgttcct ggagtggggt gaaggatatc 1380

aatatactaa gttttaacag ataccccatt taggtcagca cttgattcgt tgttgctgtg 1440

aaatatgtcc atgggacaaa agagggaata tgaaatattt gcatatggga agattataga 1500

gcataataat tttgtaaatg gagcaatctc aacctctatt tctagatcac attttcttga 1560

tgtcttcctt caaattaatg accttggatt acataaggat ttctatgcat tcattataat 1620

ttgttattcc tttcaatatc cttgtatttc aaatcttcca tataagaatt agacatggca 1680

attcttaaat tgattcagaa tggtctgata ctattccagt atcacctcct taattctgtt 1740

tctcctcgtt ttcctgattt tccttctcat tctctccttc cccgctctgt ctctctctcc 1800

ctgtcactct ctctctctcg ttccttattt tttgtttctt acctcttact gtttaacctg 1860

ttgcttcctt ctggattaat acatttagag ccattccttt atatggtcac atttcctatg 1920

actttactca attactttta aaatcctttc tattctgaga ctaattttta agaattacaa 1980

agctcattct tctgaatcta atatcactaa ctcctagact ttttccgttt tctttggata 2040

cactttaagt aggaatttat cagaattttc attcaactcg ttctttaatg cagatattta 2100

ctggttataa gaccttaagg ctgggtgcag tggctcacgc ctgtggtccc agcgctttgg 2160

ggggctgagg cgggtggatc acaggctcgg gagttcgggg ccagcctggc cagcatggtg 2220

aaaccctgtc tctactagaa aaaaaaaa 2248

<210> 15
<211> 330
<212> DNA
<213> Human

<400> 15
gcggccgcag gtacccgggc tccacgtcag ggtagacctg gcgtccctca atgccttcca 60

tgtagttggc cacgtaatcc accatctcct tccctctcct tcggaattca cttgcgttca 120

tggtgtctgg gctctgtcag aggtgaaaaa tgctggaaat tcgaattcct tacagggcta 180

ctctccttga tgggattctc caactttggg gactgaagag catgtggaga agctgctgag 240

gcactcggca ctgagacagt cactcttctt gaaactccaa gccacacgtt tccctcttct 300

tgcatttcca gccacatgtg cccctcgtgc 330

<210> 16
<211> 3370
<212> DNA
<213> Human

<400> 16
gccccgcccc ggcccgcccc gctctcctag tcccttgcaa cctggcgctg catccgggcc 60
actgtcccag gtcccaggtc ccggcccgga gctatggagc ggcgctggcc cctggggcta 120
gggctggtgc tgctgctctg cgccccgctg cccccggggg cgcgcgccaa ggaagttact 180
ctgatggaca caagcaaggc acagggagag ctgggctggc tgctggatcc cccaaaagat 240
gggtggagtg aacagcaaca gatactgaat gggacacccc tctacatgta ccaggactgc 300
ccaatgcaag gacgcagaga cactgaccac tggcttcgct ccaattggat ctaccgcggg 360
gaggaggctt cccgcgtcca cgtggagctg cagttcaccg tgcgggactg caagagtttc 420
cctgggggag ccgggcctct gggctgcaag gagaccttca accttctgta catggagagt 480
gaccaggatg tgggcattca gctccgacgg cccttgttcc agaaggtaac cacggtggct 540
gcagaccaga gcttcaccat tcgagacctt gcgtctggct ccgtgaagct gaatgtggag 600
cgctgctctc tgggccgcct gacccgccgt ggcctctacc tcgctttcca caacccgggt 660
gcctgtgtgg ccctggtgtc tgtccgggtc ttctaccagc gctgtcctga gaccctgaat 720
ggcttggccc aattcccaga cactctgcct ggccccgctg ggttggtgga agtggcgggc 780
acctgcttgc cccacgcgcg ggccagcccc aggccctcag gtgcaccccg catgcactgc 840
agccctgatg gcgagtggct ggtgcctgta ggacggtgcc actgtgagcc tggctatgag 900
gaaggtggca gtggcgaagc atgtgttgcc tgccctagcg gctcctaccg gatggacatg 960
gacacacccc attgtctcac gtgcccccag cagagcactg ctgagtctga gggggccacc 1020
atctgtacct gtgagagcgg ccattacaga gctcccgggg agggccccca ggtggcatgc 1080
acaggtcccc cctcggcccc ccgaaacctg agcttctctg cctcagggac tcagctctcc 1140
ctgcgttggg aacccccagc agatacgggg ggacgccagg atgtcagata cagtgtgagg 1200
tgttcccagt gtcagggcac agcacaggac gggggccct gccagccctg tggggtgggc 1260
gtgcacttct cgccgggggc ccgggcgctc accacacctg cagtgcatgt caatggcctt 1320
gaaccttatg ccaactacac ctttaatgtg gaagcccaaa atggagtgtc agggctgggc 1380
agctctggcc atgccagcac ctcagtcagc atcagcatgg ggcatgcaga gtcactgtca 1440
ggcctgtctc tgagactggt gaagaaagaa ccgaggcaac tagagctgac ctgggcgggg 1500
tcccggcccc gaagccctgg ggcgaacctg acctatgagc tgcacgtgct gaaccaggat 1560
gaagaacggt accagatggt tctagaaccc agggtcttgc tgacagagct gcagcctgac 1620
accacataca tcgtcagagt ccgaatgctg accccactgg gtcctggccc tttctcccct 1680
gatcatgagt ttcggaccag cccaccagtg tccaggggcc tgactggagg agagattgta 1740

gccgtcatct ttgggctgct gcttggtgca gccttgctgc ttgggattct cgttttccgg 1800
tccaggagag cccagcggca gaggcagcag aggcacgtga ccgcgccacc gatgtggatc 1860
gagaggacaa gctgtgctga agccttatgt ggtacctcca ggcatacgag gaccctgcac 1920
agggagcctt ggactttacc cggaggctgg tctaattttc cttcccggga gcttgatcca 1980
gcgtggctga tggtggacac tgtcatagga gaaggagagt ttggggaagt gtatcgaggg 2040
accctcaggc tccccagcca ggactgcaag actgtggcca ttaagacctt aaaagacaca 2100
tccccaggtg gccagtggtg gaacttcctt cgagaggcaa ctatcatggg ccagtttagc 2160
cacccgcata ttctgcatct ggaaggcgtc gtcacaaagc gaaagccgat catgatcatc 2220
acagaattta tggagaatgc agccctggat gccttcctga gggagcggga ggaccagctg 2280
gtccctgggc agctagtggc catgctgcag ggcatagcat ctggcatgaa ctacctcagt 2340
aatcacaatt atgtccaccg ggacctggct gccagaaaca tcttggtgaa tcaaaacctg 2400
tgctgcaagg tgtctgactt tggcctgact cgcctcctgg atgactttga tggcacatac 2460
gaaacccagg gaggaaagat ccctatccgt tggacagccc ctgaagccat tgcccatcgg 2520
atcttcacca cagccagcga tgtgtggagc tttgggattg tgatgtggga ggtgctgagc 2580
tttggggaca agccttatgg ggagatgagc aatcaggagg ttatgaagag cattgaggat 2640
gggtaccggt tgcccccctcc tgtggactgc cctgcccctc tgtatgagct catgaagaac 2700
tgctgggcat atgaccgtgc ccgccggcca cacttccaga agcttcaggc acatctggag 2760
caactgcttg ccaaccccca ctccctgcgg accattgcca actttgaccc cagggtgact 2820
cttcgcctgc ccagcctgag tggctcagat gggatcccgt atcgaaccgt ctctgagtgg 2880
ctcgagtcca tacgcatgaa acgctacatc ctgcacttcc actcggctgg gctggacacc 2940
atggagtgtg tgctggagct gaccgctgag gacctgacgc agatgggaat cacactgccc 3000
gggcaccaga agcgcattct ttgcagtatt cagggattca aggactgatc cctcctctca 3060
ccccatgccc aatcagggtg caaggagcaa ggacggggcc aaggtcgctc atggtcactc 3120
cctgcgcccc ttcccacaac ctgccagact aggctatcgg tgctgcttct gcccgcttta 3180
aggagaaccc tgctctgcac cccagaaaac ctctttgttt taaaagggag gtgggggtag 3240
aagtaaaagg atgatcatgg gagggagctc aggggttaat atatatacat acatacacat 3300
atatatattg ttgtaaataa acaggaaatg attttctgcc tccatcccac ccatcagggc 3360
tgcaggcact 3370

<210> 17

<211> 386
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (155)..(155)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (266)..(266)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (280)..(280)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (295)..(295)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (304)..(304)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (330)..(330)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (354)..(354)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (375)..(375)
<223> n is a, c, g, or t

<400> 17
gggaataagc ttgcgaccgc ttaattaaag atcttttttt tttttttttt ttttttttaa 60

gattcaagtc aaaattgttt tattgtcact cacatattta acataaaaag aaatgcagca 120

aatggctcag tatcgtattg aaaaaaaatc caggntgtgc agcttgttct attaacatct 180

gggagaagag ctgttcccac atcaggtcac agcagctgca gttctccaac gtccctttgc 240

agtacacagc cgtgggcaca cttggncaca gcccacgggn cagacaggta gcagncagct 300

cttnctttgc agggagggtg catttgcctn ctttgcactt gcagggagcc ggtncaggtt 360

ttagggagac acccnttggg tccagg 386

<210> 18
<211> 448
<212> DNA
<213> Human

<400> 18
tttgaattgg atattttta atgcaaattg ttgtttttct tcatttgtct actttattaa 60

gctgtcctca ggccccaaga aacatactgt cccctcattt agaaacagac taactccgtt 120

ttcctccact atcccctccc ctgtccttga tctgtagatc ctgttaagac aggaaaaaca 180

gtgttggtca aagggtacac gctttcagtt acaagatgaa caagttctga atacgtaaga 240

tagaacatgg gaggtgatgt ggccgggtgc agtgactcac gcctgtaatc ccagcacttt 300

gggaggccga ggtgggcgga tcatgaggtc aagggatcga gatcatcctg gccaacatgg 360

tgaaaccccg tctctactaa aaatacaaaa attagctggg catggtggca cacgcctata 420

gtcccagcta cttaggaggc tgaggcaa 448

<210> 19
<211> 4574
<212> DNA
<213> Human

<400> 19
gagcgggcga gggagcgcgc gcggccgcca caaagctcgg gcgccgcggg gctgcatgcg 60

gcgtacctgg cccggcgcgg cgactgctct ccgggctggc gggggccggc cgcgagcccc 120

gggggccccg aggccgcagc ttgcctgcgc gctctgagcc ttcgcaactc gcgagcaaag 180

tttggtggag gcaacgccaa gcctgagtcc tttcttcctc tcgttcccca aatccgaggc 240

agcccgcggg cgtcatgccc gcgctcctcc gcagcctggg gtacgcgctg aagcccggga 300

ggcttggcgc cggcgaagac ccaaggacca ctcttctgcg tttggagttg ctccccacaa 360

ccccgggctc gtcgctttct ccatcccgac ccagccgggg cgcggggaca acacaggtcg 420

cggaggagcg ttgccattca agtgactgca gcagcagcgg cagcgcctcg gttcctgagc 480

ccaccgcagg ctgaaggcat tgcgcgtagt ccatgcccgt agaggaagtg tgcagatggg 540

attaacgtcc acatggagat atggaagagg accggggatt ggtaccgtaa ccatggtcag 600

ctggggtcgt ttcatctgcc tggtcgtggt caccatggca accttgtccc tggcccggcc 660

ctccttcagt ttagttgagg ataccacatt agagccagaa gagccaccaa ccaaatacca 720

aatctctcaa ccagaagtgt acgtggctgc gccaggggag tcgctagagg tgcgctgcct 780

gttgaaagat gccgccgtga tcagttggac taaggatggg gtgcacttgg ggcccaacaa 840

taggacagtg cttattgggg agtacttgca gataaagggc gccacgccta gagactccgg 900
cctctatgct tgtactgcca gtaggactgt agacagtgaa acttggtact tcatggtgaa 960
tgtcacagat gccatctcat ccggagatga tgaggatgac accgatggtg cggaagattt 1020
tgtcagtgag aacagtaaca acaagagagc accatactgg accaacacag aaaagatgga 1080
aaagcggctc catgctgtgc ctgcggccaa cactgtcaag tttcgctgcc cagccggggg 1140
gaacccaatg ccaaccatgc ggtggctgaa aaacgggaag gagtttaagc aggagcatcg 1200
cattggaggc tacaaggtac gaaaccagca ctggagcctc attatggaaa gtgtggtccc 1260
atctgacaag ggaaattata cctgtgtggt ggagaatgaa tacgggtcca tcaatcacac 1320
gtaccacctg gatgttgtgg agcgatcgcc tcaccggccc atcctccaag ccggactgcc 1380
ggcaaatgcc tccacagtgg tcggaggaga cgtagagttt gtctgcaagg tttacagtga 1440
tgcccagccc cacatccagt ggatcaagca cgtggaaaag aacggcagta aatacgggcc 1500
cgacgggctg ccctacctca aggttctcaa gcactcgggg ataaatagtt ccaatgcaga 1560
agtgctggct ctgttcaatg tgaccgaggc ggatgctggg gaatatatat gtaaggtctc 1620
caattatata gggcaggcca accagtctgc ctggctcact gtcctgccaa aacagcaagc 1680
gcctggaaga gaaaaggaga ttacagcttc cccagactac ctggagatag ccatttactg 1740
cataggggtc ttcttaatcg cctgtatggt ggtaacagtc atcctgtgcc gaatgaagaa 1800
cacgaccaag aagccagact tcagcagcca gccggctgtg cacaagctga ccaaacgtat 1860
ccccctgcgg agacaggtaa cagtttcggc tgagtccagc tcctccatga actccaacac 1920
cccgctggtg aggataacaa cacgcctctc ttcaacggca gacaccccca tgctggcagg 1980
ggtctccgag tatgaacttc cagaggaccc aaaatgggag tttccaagag ataagctgac 2040
actgggcaag cccctgggag aaggttgctt tgggcaagtg gtcatggcgg aagcagtggg 2100
aattgacaaa gacaagccca aggaggcggt caccgtggcc gtgaagatgt tgaaagatga 2160
tgccacagag aaagaccttt ctgatctggt gtcagagatg gagatgatga agatgattgg 2220
gaaacacaag aatatcataa atcttcttgg agcctgcaca caggatgggc ctctctatgt 2280
catagttgag tatgcctcta aaggcaacct ccgagaatac ctccgagccc ggaggccacc 2340
cgggatggag tactcctatg acattaaccg tgttcctgag gagcagatga ccttcaagga 2400
cttggtgtca tgcacctacc agctggccag aggcatggag tacttggctt cccaaaaatg 2460
tattcatcga gatttagcag ccagaaatgt tttggtaaca gaaaacaatg tgatgaaaat 2520
agcagacttt ggactcgcca gagatatcaa caatatagac tattacaaaa agaccaccaa 2580
tgggcggctt ccagtcaagt ggatggctcc agaagccctg tttgatagag tatacactca 2640

tcagagtgat gtctggtcct tcggggtgtt aatgtgggag atcttcactt tagggggctc 2700
gccctaccca gggattcccg tggaggaact ttttaagctg ctgaaggaag gacacagaat 2760
ggataagcca gccaactgca ccaacgaact gtacatgatg atgagggact gttggcatgc 2820
agtgccctcc cagagaccaa cgttcaagca gttggtagaa gacttggatc gaattctcac 2880
tctcacaacc aatgaggaat acttggacct cagccaacct ctcgaacagt attcacctag 2940
ttaccctgac acaagaagtt cttgttcttc aggagatgat tctgtttttt ctccagaccc 3000
catgccttac gaaccatgcc ttcctcagta tccacacata aacggcagtg ttaaaacatg 3060
aatgactgtg tctgcctgtc cccaaacagg acagcactgg gaacctagct acactgagca 3120
gggagaccat gcctcccaga gcttgttgtc tccacttgta tatatggatc agaggagtaa 3180
ataattggaa aagtaatcag catatgtgta aagatttata cagttgaaaa cttgtaatct 3240
tccccaggag gagaagaagg tttctggagc agtggactgc cacaagccac catgtaaccc 3300
ctctcacctg ccgtgcgtac tggctgtgga ccagtaggac tcaaggtgga cgtgcgttct 3360
gccttccttg ttaattttgt aataattgga gaagatttat gtcagcacac acttacagag 3420
cacaaatgca gtatataggt gctggatgta tgtaaatata ttcaaattat gtataaatat 3480
atattatata tttacaagga gttatttttt gtattgattt taaatggatg tcccaatgca 3540
cctagaaaat tggtctctct ttttttaata gctatttgct aaatgctgtt cttacacata 3600
atttcttaat tttcaccgag cagaggtgga aaaatacttt tgctttcagg gaaaatggta 3660
taacgttaat ttattaataa attggtaata tacaaaacaa ttaatcattt atagtttttt 3720
ttgtaattta agtggcattt ctatgcaggc agcacagcag actagttaat ctattgcttg 3780
gacttaacta gttatcagat cctttgaaaa gagaatattt acaatatatg actaatttgg 3840
ggaaaatgaa gttttgattt atttgtgttt aaatgctgct gtcagacgat tgttcttaga 3900
cctcctaaat gccccatatt aaaagaactc attcatagga aggtgtttca ttttggtgtg 3960
caaccctgtc attacgtcaa cgcaacgtct aactggactt cccaagataa atggtaccag 4020
cgtcctctta aaagatgcct taatccattc cttgaggaca gaccttagtt gaaatgatag 4080
cagaatgtgc ttctctctgg cagctggcct tctgcttctg agttgcacat taatcagatt 4140
agcctgattc tcttcagtga attttgataa tggcttccag actctttgcg ttggagacgc 4200
ctgttaggat cttcaagtcc catcatagaa aattgaaaca cagagttgtt ctgctgatag 4260
ttttggggat acgtccatct ttttaaggga ttgctttcat ctaattctgg caggacctca 4320
ccaaaagatc cagcctcata cctacatcag acaaaatatc gccgttgttc cttctgtact 4380

aaagtattgt gttttgcttt ggaaacaccc actcactttg caatagccgt gcaagatgaa 4440

tgcagattac actgatctta tgtgttacaa aattggagaa agtatttaat aaaacctgtt 4500

aatttttata ctgacaataa aaatgtttct acagatatta atgttaacaa gacaaaataa 4560

atgtcacgca actt 4574

<210> 20
<211> 546
<212> DNA
<213> Human

<400> 20
gatttctccc ggaacctctg ctcagcctgg tgaaccacac aggccagcgc tctgacatgc 60

agaaggtgac cctgggcctg cttgtgttcc tggcaggctt tcctgtcctg gacgccaatg 120

acctagaaga taaaaacagt cctttctact atgactggca cagcctccag gttggcgggc 180

tcatctgcgc tggggttctg tgcgccatgg gcatcatcat cgtcatgagt gcaaaatgca 240

aatgcaagtt tggccagaag tccggtcacc atccagggga gactccacct ctcatcaccc 300

caggctcagc ccaaagctga tgaggacaga ccagctgaaa ttgggtggag gaccgttctc 360

tgtccccagg tcctgtctct gcacagaaac ttgaactcca ggatggaatt cttcctcctc 420

tgctgggact cctttgcatg gcagggcctc atctcacctc tcgcaagagg gtctctttgt 480

tcaatttttt ttaatctaaa atgattgtgc ctctccaaaa aaaaaaaaaa aaaaaaaaaa 540

aaaaaa 546

<210> 21
<211> 2880
<212> DNA
<213> Human

<400> 21
tgctgctctc cgcccgcgtc cggctcgtgg ccccctactt cgggcaccat ggacacctcc 60

cggctcggtg tgctcctgtc cttgcctgtg ctgctgcagc tggcgaccgg gggcagctct 120

cccaggtctg gtgtgttgct gaggggctgc cccacacact gtcattgcga gcccgacggc 180

aggatgttgc tcagggtgga ctgctccgac ctggggctct cggagctgcc ttccaacctc 240

agcgtcttca cctcctacct agacctcagt atgaacaaca tcagtcagct gctcccgaat 300

cccctgccca gtctccgctt cctggaggag ttacgtcttg cgggaaacgc tctgacatac 360

attcccaagg gagcattcac tggcctttac agtcttaaag ttcttatgct gcagaataat 420

cagctaagac acgtacccac agaagctctg cagaatttgc gaagccttca atccctgcgt 480

ctggatgcta accacatcag ctatgtgccc ccaagctgtt tcagtggcct gcattccctg 540

aggcacctgt ggctggatga caatgcgtta acagaaatcc ccgtccaggc ttttagaagt 600
ttatcggcat tgcaagccat gaccttggcc ctgaacaaaa tacaccacat accagactat 660
gcctttggaa acctctccag cttggtagtt ctacatctcc ataacaatag aatccactcc 720
ctgggaaaga aatgctttga tgggctccac agcctagaga ctttagattt aaattacaat 780
aaccttgatg aattccccac tgcaattagg acactctcca accttaaaga actaggattt 840
catagcaaca atatcaggtc gatacctgag aaagcatttg taggcaaccc ttctcttatt 900
acaatacatt tctatgacaa tcccatccaa tttgttggga gatctgcttt tcaacattta 960
cctgaactaa gaacactgac tctgaatggt gcctcacaaa taactgaatt tcctgattta 1020
actggaactg caaacctgga gagtctgact ttaactggag cacagatctc atctcttcct 1080
caaaccgtct gcaatcagtt acctaatctc caagtgctag atctgtctta caacctatta 1140
gaagatttac ccagtttttc agtctgccaa aagcttcaga aaattgacct aagacataat 1200
gaaatctacg aaattaaagt tgacactttc cagcagttgc ttagcctccg atcgctgaat 1260
ttggcttgga acaaaattgc tattattcac cccaatgcat tttccacttt gccatcccta 1320
ataaagctgg acctatcgtc caacctcctg tcgtcttttc ctataactgg gttacatggt 1380
ttaactcact taaaattaac aggaaatcat gccttacaga gcttgatatc atctgaaaac 1440
tttccagaac tcaaggttat agaaatgcct tatgcttacc agtgctgtgc atttggagtg 1500
tgtgagaatg cctataagat ttctaatcaa tggaataaag gtgacaacag cagtatggac 1560
gaccttcata agaaagatgc tggaatgttt caggctcaag atgaacgtga ccttgaagat 1620
ttcctgcttg actttgagga agacctgaaa gcccttcatt cagtgcagtg ttcaccttcc 1680
ccaggcccct tcaaaccctg tgaacacctg cttgatggct ggctgatcag aattggagtg 1740
tggaccatag cagttctggc acttacttgt aatgctttgg tgacttcaac agttttcaga 1800
tcccctctgt acatttcccc cattaaactg ttaattgggg tcatcgcagc agtgaacatg 1860
ctcacgggag tctccagtgc cgtgctggct ggtgtggatg cgttcacttt tggcagcttt 1920
gcacgacatg gtgcctggtg ggagaatggg gttggttgcc atgtcattgg tttttttgtcc 1980
atttttgctt cagaatcatc tgttttcctg cttactctgg cagccctgga gcgtgggttc 2040
tctgtgaaat attctgcaaa atttgaaacg aaagctccat tttctagcct gaaagtaatc 2100
attttgctct gtgccctgct ggccttgacc atggccgcag ttcccctgct gggtggcagc 2160
aagtatggcg cctcccctct ctgcctgcct ttgccttttg gggagcccag caccatgggc 2220
tacatggtcg ctctcatctt gctcaattcc ctttgcttcc tcatgatgac cattgcctac 2280

```
accaagctct actgcaattt ggacaaggga gacctggaga atatttggga ctgctctatg   2340

gtaaaacaca ttgccctgtt gctcttcacc aactgcatcc taaactgccc tgtggctttc   2400

ttgtccttct cctctttaat aaaccttaca tttatcagtc ctgaagtaat taagtttatc   2460

cttctggtgg tagtcccact tcctgcatgt ctcaatcccc ttctctacat cttgttcaat   2520

cctcacttta aggaggatct ggtgagcctg agaaagcaaa cctacgtctg gacaagatca   2580

aaacacccaa gcttgatgtc aattaactct gatgatgtcg aaaaacagtc ctgtgactca   2640

actcaagcct tggtaacctt taccagctcc agcatcactt atgacctgcc tcccagttcc   2700

gtgccatcac cagcttatcc agtgactgag agctgccatc tttcctctgt ggcatttgtc   2760

ccatgtctct aattaatatg tgaaggaaaa tgttttcaaa ggttgagaac ctgaaaatgt   2820

gagattgagt atatcagagc agtaattaat aagaagagct gaggtgaaac tcggtttaaa   2880


<210>  22
<211>  5534
<212>  DNA
<213>  Human

<400>  22
tctcccggga gccactccca tgggcgcctc tccagcccct ggcctggaag caccaggaac     60

cctggggatg gggcagaccc tcacagcccg gggtctggag ccggtgtcgg agctcatctg    120

ggcccatgac ctctccagac atttggcaaa atcaaggccc ttagaccagg gacagaccca    180

agcccaggcc ctcccagagg tcctaggacg caaccctttg tgcccttggg ctctggaaga    240

ggtttgggaa gggtttgggg tggaagatgg caaagagcag cttggccagg tgaggatgag    300

gcagggcaga cacaggccag tggggcgtgc catgtgccac agatggagag gaccaggagc    360

cagtggcccg gcaggcacag cccggttggc gtgggccaga gcgcccatca ctgacccgtg    420

agaactcgac tgcccctgcc agctctggca ctgcccccctc ccagccgccc cgccctagca    480

ccctgggggg caccccgccc aaccgtggcc tggtccggcc cctcccgccc tttgctccag    540

ttcccgggct tggcacctat agtgggggtg ccgcccgcct gccaggctcc ggggccgggc    600

ccacgggagg gtggggcggc tgggaagctg gcacgctgcc ccgggggagc ctctctcggc    660

aggcgcccgg gtgccgcggg ggggaggggg aacaaagggc tcattctccc cgtgcgcagc    720

cggtggcatc gccggggcgt tggcggaagc ccccggggcc cgggaggggg caggcccagg    780

cgcggccgcc gaatcacggg ctcctgtttc ccgcagggtg ctggaggagg aaaccggcgg    840

agcagcttcc ccactctcag ttgcgcttct ggcgatggcg atcagaggtc ctgctgcgct    900

ctccgccgcg ctctacctcc attagccgcg ctgcgcggtg ctgcgccctc gccggtgcct    960
```

ctctcctggg tcccaggatc ggcccccacc atccaggcac gaccccсttc cccggcccct 1020
cggcctttcc cccaactcgg ccatctccga cccggggcgc gtgttccccc cggcccggcg 1080
ccttctctcc ctccgggggc acccgctccc tagccccggc ccggccctcc ccgcggcgca 1140
gcacggagtc tcggcgtccc atggcgcaac ctacggcctc ggcccagaag ctggtgcggc 1200
cgatccgcgc cgtgtgccgc atcctgcaga tcccggagtc cgacccctcc aacctgcggc 1260
cctagagcgc ccccgccgcc ccgggggaag gagagcgcga gcgcgctgag cagacagagc 1320
gggagaacgc gtcctcgccc gccggccggg aggccccgga gctggcccat ggggagcagg 1380
cgccccggtgc cggccacgac gaccgccacc gcccgcgccg cgaccggccg gtgaagccca 1440
gggacccccc tctgggagag ccccatgagg gcaggagagt gatggagagt acgcccagct 1500
tcctgaaggg caccccaacc tgggagaaga cggccccaga gaacggcatc gtgagacagg 1560
agcccggcag cccgcctcga gatggactgc accatgggcc gctgtgcctg ggagagcctg 1620
ctcccttttg gaggggcgtc ctgagcaccc cagactcctg gcttccccct ggcttccccc 1680
agggccccaa ggacatgctc ccacttgtgg agggcgaggg cccccagaat ggggagagga 1740
aggtcaactg gctgggcagc aaagagggac tgcgctggaa ggaggccatg cttacccatc 1800
cgctggcatt ctgcgggcca gcgtgcccac ctcgctgtgg cccсctgatg cctgagcata 1860
gtggtggcca tctcaagagt gaccctgtgg ccttccggcc ctggcactgc cctttccttc 1920
tggagaccaa gatcctggag cgagctccct tctgggtgcc cacctgcttg ccaccctacc 1980
tagtgtctgg cctgccccca gagcatccat gtgactggcc cctgaccccg cacccctggg 2040
tatactccgg gggccagccc aaagtgccct ctgccttcag cttaggcagc aagggctttt 2100
actacaagga tccgagcatt cccaggttgg caaaggagcc cttggcagct gcggaacctg 2160
ggttgtttgg cttaaactct ggtgggcacc tgcagagagc cggggaggcc gaacgccctt 2220
cactgcacca gagggatgga gagatgggag ctggccggca gcagaatcct tgcccgctct 2280
tcctggggca gccagacact gtgccctgga cctcctggcc cgcttgtccc ccaggccttg 2340
ttcatactct tggcaacgtc tgggctgggc caggcgatgg gaaccttggg taccagctgg 2400
ggccaccagc aacaccaagg tgcccctctc ctgagccgcc tgtcacccag cggggctgct 2460
gttcatccta cccacccact aaaggtgggg gtcttggccc ttgtgggaag tgccaggagg 2520
gcctggaggg gggtgccagt ggagccagcg aacccagcga ggaagtgaac aaggcctctg 2580
gccccagggc ctgtcccccc agccaccaca ccaagctgaa gaagacatgg ctcacacggc 2640
actcggagca gtttgaatgt ccacgcggct gccctgaggt cgaggagagg ccggttgctc 2700
ggctccgggc cctcaaaagg gcaggcagcc ccgaggtcca gggagcaatg ggcagtccag 2760

cccccaagcg gccaccggac ccttttccag gcactgcaga acagggggct gggggttggc 2820
aggaggtgcg ggacacatcg atagggaaca aggatgtgga ctcgggacag catgatgagc 2880
agaaaggacc ccaagatggc caggccagtc tccaggaccc gggacttcag gacataccat 2940
gcctggctct ccctgcaaaa ctggctcaat gccaaagttg tgcccaggca gctggagagg 3000
gaggagggca cgcctgccac tctcagcaag tgcggagatc gcctctggga ggggagctgc 3060
agcaggagga agacacagcc accaactcca gctctgagga aggcccaggg tccggccctg 3120
acagccggct cagcacaggc ctcgccaagc acctgctcag tggtttgggg gaccgactgt 3180
gccgcctgct gcggagggag cgggaggccc tggcttgggc ccagcgggaa ggccaagggc 3240
cagccgtgac agaggacagc ccaggcattc cacgctgctg cagccgttgc caccatggac 3300
tcttcaacac ccactggcga tgtccccgct gcagccaccg gctgtgtgtg gcctgtggtc 3360
gtgtggcagg cactgggcgg gccagggaga aagcaggctt tcaggagcag tccgcggagg 3420
agtgcacgca ggaggccggg cacgctgcct gttccctgat gctgacccag tttgtctcca 3480
gccaggcttt ggcagagctg agcactgcaa tgcaccaggt ctgggtcaag tttgatatcc 3540
gggggcactg cccctgccaa gctgatgccc gggtatgggc ccccggggat gcaggccagc 3600
agaaggaatc aacacagaaa acgcccccaa ctccacaacc ttcctgcaat ggcgacaccc 3660
acaggaccaa gagcatcaaa gaggagaccc ccgattccgc tgagacccca gcagaggacc 3720
gtgctggccg agggcccctg ccttgtcctt ctctctgcga actgctggct tctaccgcgg 3780
tcaaactctg cttgggccat gagcgaatac acatggcctt cgcccccgtc actccggccc 3840
tgcccagtga tgaccgcatc accaacatcc tggacagcat tatcgcacag gtggtggaac 3900
ggaagatcca ggagaaagcc ctggggccgg ggcttcgagc tggcccgggt ctgcgcaagg 3960
gcctgggcct gcccctctct ccagtgcggc cccggctgcc tcccccaggg gctttgctgt 4020
ggctgcagga gccccagcct tgccctcggc gtggcttcca cctcttccag gagcactgga 4080
ggcagggcca gcctgtgttg gtgtcaggga tccaaaggac attgcagggc aacctgtggg 4140
ggacagaagc tcttggggca cttggaggcc aggtgcaggc gctgagcccc ctcggacctc 4200
cccagcccag cagcctgggc agcacaacat tctgggaggg cttctcctgg cctgagcttc 4260
gcccaaagtc agacgagggc tctgtcctcc tgctgcaccg agctttgggg gatgaggaca 4320
ccagcagggt ggagaaccta gctgccagtc tgccacttcc ggagtactgc gccctccatg 4380
gaaaactcaa cctggcttcc tacctcccac cgggccttgc cctgcgtcca ctggagcccc 4440
agctctgggc agcctatggt gtgagcccgc accggggaca cctggggacc aagaacctct 4500

gtgtggaggt ggccgacctg gtcagcatcc tggtgcatgc cgacacacca ctgcctgcct 4560

ggcaccgggc acagaaagac ttcctttcag gcctggacgg ggaggggctc tggtctccgg 4620

gcagccaggt cagcactgtg tggcacgtgt tccgggcaca ggacgcccag cgcatccgcc 4680

gctttctcca gatggtgcag ggcctggtga gcacagtcag cgtcactcag cacttcctct 4740

cccctgagac ctctgccctc tctgctcagc tctgccacca gggacccagc cttccccctg 4800

actgccacct gctttatgcc cagatggact gggctgtgtt ccaagcagtg aaggtggccg 4860

tggggacatt acaggaggcc aaatagaggg atgctaggtg tctgggatcg gggtggggac 4920

aggtagacca ggtgctcagc ccaggcacaa cttcagcagg ggatggcgct aggggacttg 4980

gggatttctg gtcaacccca caagcaccac tctgggcaca agcagggcac tctgttcccc 5040

tcccccttaa gccaacaacc acagtgccac caagctcaca cctgtccttc tcaggctggc 5100

atctccccca ccctgtgccc cttttcatgg taccaggccc gcactggggg caattgactt 5160

cctccaatcc ccactcctcc gagacccagg agacaaacag cccttccttg gggaaacttg 5220

ggaatcattc tggcttaaac aacacctcct cctgctgctc actcccgctg agcccactct 5280

actgccccag ctccgtttct accaccgcat cctcactggg ctcactgcag gcatgctgaa 5340

caaggggcct ccaaccttct gccctcctgc caaaagatct ggggagtgtg aggagagggt 5400

ggcatcagga gctgctcagg cttggcggag ggagcggcat gggcgatgtc actcagcccc 5460

ttcccggtcc gcccgcttcc ctccttcatg atttccatta aagtctgttg ttttgtgaaa 5520

aaaaaaaaaa aaaa 5534

<210> 23
<211> 633
<212> DNA
<213> Human

<400> 23
actcttctgg tccccacaga ctcagagaga acccaccatg gtgctgtctc ctgccgacaa 60

gaccaacgtc aaggccgcct ggggtaaggt cggcgcgcac gctggcgagt atggtgcgga 120

ggccctggag aggatgttcc tgtccttccc caccaccaag acctacttcc cgcacttcga 180

cctgagccac ggctctgccc aggttaaggg ccacggcaag aaggtggccg acgcgctgac 240

caacgccgtg gcgcacgtgg acgacatgcc caacgcgctg tccgccctga gcgacctgca 300

cgcgcacaag cttcgggtgg acccggtcaa cttcaagctc ctaagccact gcctgctggt 360

gaccctggcc gcccacctcc ccgccgagtt cacccctgcg gtgcacgcct ccctggacaa 420

gttcctggct tctgtgagca ccgtgctgac ctccaaatac cgttaagctg gagcctcggt 480

ggccatgctt cttgcccctt gggcctcccc ccagcccctc ctccccttcc tgcacccgta 540

cccccgtggt ctttgaataa agtctgagtg ggcggcaaaa aaaaaaaaaa aaaaaaaaaa 600

aacaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 633

<210> 24
<211> 393
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (75)..(75)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (81)..(81)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (89)..(90)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (95)..(95)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (167)..(167)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (179)..(179)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (194)..(194)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (237)..(237)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (249)..(249)
<223> n is a, c, g, or t

<220>

<221> misc_feature
<222> (276)..(276)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (285)..(285)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (295)..(295)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (312)..(312)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (358)..(358)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (370)..(370)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (377)..(377)
<223> n is a, c, g, or t

<400> 24
tttttttttt tgccgcccac tcagacttta ttcaaagacc aggaagggcc ggtgcaagga 60

ggggaggagg gcccnttgga nggccagcnn ggaanggaac ggctaccgag gctccagctt 120

aacggtattt ggaggtcagc acggtgctca cagaagccag gaacttntcc agggaggcnt 180

gcaccgcagg ggtngaactc ggcggggagg tgggcggcca gggtcaccag caggcantgg 240

cttaggagnt tgaagttgac cgggtccacc cgaagntttt gcgcntgcag gtcgntcagg 300

gcggacagcg cntttgggca tttcgtccac gttgcgccac ggcttttggg tcagcgcntc 360

ggccaccttn tttgccntgg ccctttaacc tgg 393

<210> 25
<211> 3726
<212> DNA
<213> Human

<400> 25
cagcgctgct ccccgggcgc tcctccccgg gcgctcctcc ccaggcctcc cgggcgcttg 60

gatcccggcc atctccgcac ccttcaagtg ggtgtgggtg atttcctggc gggggagca 120

gccaggtgag cccaagatgc tgctgcgctc gaagcctgcg ctgccgccgc cgctgatgct 180
gctgctcctg gggccgctgg gtcccctctc ccctggcgcc ctgccccgac ctgcgcaagc 240
acaggacgtc gtggacctgg acttcttcac ccaggagccg ctgcacctgg tgagcccctc 300
gttcctgtcc gtcaccattg acgccaacct ggccacggac ccgcggttcc tcatcctcct 360
gggttctcca aagcttcgta ccttggccag aggcttgtct cctgcgtacc tgaggtttgg 420
tggcaccaag acagacttcc taattttcga tcccaagaag gaatcaacct ttgaagagag 480
aagttactgg caatctcaag tcaaccagga tatttgcaaa tatggatcca tccctcctga 540
tgtggaggag aagttacggt tggaatggcc ctaccaggag caattgctac tccgagaaca 600
ctaccagaaa aagttcaaga acagcaccta ctcaagaagc tctgtagatg tgctatacac 660
ttttgcaaac tgctcaggac tggacttgat ctttggccta aatgcgttat taagaacagc 720
agatttgcag tggaacagtt ctaatgctca gttgctcctg gactactgct cttccaaggg 780
gtataacatt tcttgggaac taggcaatga acctaacagt ttccttaaga aggctgatat 840
tttcatcaat gggtcgcagt taggagaaga ttttattcaa ttgcataaac ttctaagaaa 900
gtccaccttc aaaaatgcaa aactctatgg tcctgatgtt ggtcagcctc gaagaaagac 960
ggctaagatg ctgaagagct tcctgaaggc tggtggagaa gtgattgatt cagttacatg 1020
gcatcactac tatttgaatg gacggactgc taccagggaa gattttctaa accctgatgt 1080
attggacatt tttatttcat ctgtgcaaaa agttttccag gtggttgaga gcaccaggcc 1140
tggcaagaag gtctggttag gagaaacaag ctctgcatat ggaggcggag cgcccttgct 1200
atccgacacc tttgcagctg gctttatgtg gctggataaa ttgggcctgt cagcccgaat 1260
gggaatagaa gtggtgatga ggcaagtatt ctttggagca ggaaactacc atttagtgga 1320
tgaaaacttc gatcctttac ctgattattg gctatctctt ctgttcaaga aattggtggg 1380
caccaaggtg ttaatggcaa gcgtgcaagg ttcaaagaga aggaagcttc gagtatacct 1440
tcattgcaca aacactgaca atccaaggta taaagaagga gatttaactc tgtatgccat 1500
aaacctccat aatgtcacca agtacttgcg gttaccctat cctttttcta acaagcaagt 1560
ggataaatac cttctaagac ctttgggacc tcatggatta ctttccaaat ctgtccaact 1620
caatggtcta actctaaaga tggtggatga tcaaaccttg ccacctttaa tggaaaaacc 1680
tctccggcca ggaagttcac tgggcttgcc agctttctca tatagttttt ttgtgataag 1740
aaatgccaaa gttgctgctt gcatctgaaa ataaaatata ctagtcctga cactgaattt 1800
ttcaagtata ctaagagtaa agcaactcaa gttataggaa aggaagcaga taccttgcaa 1860

agcaactagt gggtgcttga gagacactgg gacactgtca gtgctagatt tagcacagta 1920
ttttgatctc gctaggtaga acactgctaa taataatagc taataatacc ttgttccaaa 1980
tactgcttag cattttgcat gttttacttt tatctaaagt tttgttttgt tttattattt 2040
atttatttat ttattttgtg acggagagag attccatctc aaaaaaacaa gttattaaaa 2100
atgtatatga atgctcctaa tatggtcagg aagcaaggaa gcgaaggata tattatgagt 2160
tttaagaagg tgcttagctg tatatttatc tttcaaaatg tattagaaga ttttagaatt 2220
ctttccttca tgtgccatct ctacaggcac ccatcagaaa aagcatactg ccgttaccgt 2280
gaaactggtt gtaaaagaga aactatctat ttgcacctta aaagacagct agattttgct 2340
gattttcttc tttcggtttt ctttgtcagc aataatatgt gagaggacag attgttagat 2400
atgatagtat aaaaaatggt taatgacaat tcagaggcga ggagattctg taaacttaaa 2460
attactataa atgaaattga tttgtcaaga ggataaattt tagaaaacac ccaatacctt 2520
ataactgtct gttaatgctt gctttttctc tacctttctt ccttgtttca gttgggaagc 2580
ttttggctgc aagtaacaga aactcctaat tcaaatggct taagcaataa ggaaatgtat 2640
attcccacat aactagacgt tcaaacaggc caggctccag cacttcagta cgtcaccagg 2700
ggatctgggt tcttcccagc tctctgctct gccatcttta gcgctggctt cattctcaga 2760
ctctggtagc atgatggctg tagctgtttc atgggcccct tcaaacctca tagcaaccag 2820
aggaagaaaa tgagccattt tttgagtctc cttcatagac ttgaataact ctttttcaga 2880
gcttctcaca gcaaacctct cctcatgtct cctcatgtct tattgttcag aaatgggtaa 2940
tgtggccatt tcaccagtca ctgccaacaa caacgaggtt cctataattg tctctgagta 3000
acccctttgga atggagaggg tgttggtcag tctacaaact gaacactgca gttctgcgct 3060
ttttaccagt gaaaaaatgt aattattttc ccctcttaag gattaatatt cttcaaatgt 3120
atgcctgtta tggatatagt atctttaaaa ttttttattt taatagcttt aggggtacac 3180
actttttgct tacaggggtg aattgtgtag tggtgaagac tcggctttta atgtacttgt 3240
cacctgagtg atgtacattg tacccaatag gtaatttttc atccattacc ctccttccgc 3300
cctcttccct tctgagtctc caacatccct tataccactg tgtatgttct tgtgtaccta 3360
cagctaagct tccacttata agtgagaaca tgcagtattt ggttttccat tcctgagtta 3420
cttcccttag gataacagcc cccagttccg tccaagttgc tgcaaaatac attattcttc 3480
tttatggctg agtaatagtc catggtacat atataccaca ttttctttat ccacttatca 3540
gttgatggac acttaggtta attccattca atttcattca atttaagtat atttgtaagg 3600
agctaaagct gaaaattaaa ttttagatct ttcaatactc ttaaatttta tatgtaagtg 3660

gtttttatat tttcacattt gaaataaagt aatttttata accttgaaaa aaaaaaaaaa 3720

aaaaaa 3726

<210> 26
<211> 127145
<212> DNA
<213> Human

<400> 26
gatcacaggt gtgagacacc acacccagcc agaaattgaa ccttggtgag agacactgag 60

tggggaaggg cagagactgg gagttaggag ttacagcatc tgaaggccac atcctggaga 120

gatggccaca gactcagcca gtgaagagga agtgctgggg ctggggccag aaccctgtct 180

gtgtgacccc tgagactgag ctcagacacc cctaaccctg aaggcacctc tctttcagga 240

ccaacagcca aaggcacaga agccactggc ctgggaggga ctgtccctgg gaatgaccct 300

gctctctgag ggctgggcat ctggactccc tctgctccag ctcctctgtg gttgtattcc 360

tccatttcta ttctaattag tcagtttcca tggctggata ccataaaatc tcagtagaag 420

gaagaacagg ccaaccatca gagctgttca atttcagaaa atctcttttt gttgctgggg 480

acagagtctc actatgtcac ccaggctgga gtgcagtggc gcgatctcag ctcactgaaa 540

cctctgcctc ccgggttcaa gcgattctcc tgcctcagcc tcctgagtag ctgggattgc 600

aggtgcatgc caccttgcct ggctaatttt tgtattttta gtagagatgg ggtttcacca 660

tgttggccag gctggtctca aactcctaac ctcaggtgat ccacccacct cagtctccca 720

aagtgtttgg attacaggcg tcggccaccg cgcctggccc agaaaatctc tttagtcggg 780

acttgagaaa gggactgggt tccatctggt gggaatggga gggaggttca gtgtctgctg 840

ccagtgagac ctgggtttgt tccctccccc ctggctgtgt gatggaggca agacccttca 900

ttctttgagc ctcagtgtcc tgtctgtgaa acaggcaatg agcacattta tctcacaggg 960

tcccggtgag gcacattggg ataacatagg tgaagccctt aacacagttc tgggcaaagc 1020

aatgtgactt ctctcctccc cagcggcact tgcaccacgt ggggagaaac taggttaata 1080

catccctgcc acacataact accaagtgcc tgctgtgtgc tggccacaac actaagagcc 1140

ttacatgtgg tccttcattt aattttcaaa gtgatgacga tgattctcag tgcacagatg 1200

gagactctga gcccagagag gctaaataaa ctgctctcaa ggacaccagc actttctgca 1260

aagagcccca gatcctaact aggacttacg ttgcctgcgc tgggaagaga cccaaatgcc 1320

tcccggctgt aggagtccct gattgcagac gtagggtctc agtccccgcc ccaagaagct 1380

gtaggtccag ttgaagaaga gacacacaca aggaaaagga aattgaactg agaaggcaaa 1440

gcgtgactgt ggggcctctg ctatatccag ggtctccaga gaaaggacta gaagccacta 1500
ttccaattct gaggcctcag ggaagcagca agttcctgtg aggaaacagg atcccacagg 1560
tttcatcctc ctcctgtcac tcttctaggt ggggagggag ggctccccca cgtcccacat 1620
aagcacacag aaaggagagg ccagggcagc acaggctcag aacctgaagg acttggggac 1680
atcgccagcc ccatatcctt gttttataca ccaggtaggg caggaactat ggcaggtcca 1740
cagaaagggg ccggcagaag cacagccacg acgcaggccc cctgggctgt ccagtttctc 1800
ccggacagaa catttccctt ccctagcagc ccccaacgtg gagcactgga tttggagtca 1860
ggagacctgt gtcttctgca atcactctga gaccaactcc tgtgtaatcg tgagtgagcg 1920
ccttcccatc tctgggcctc agcttccacc tctctaaaat gagggggttg gattccatcc 1980
aatgttataa gagccaaagg ttatgagttg gtagcgcccc caccattccg ggtttctcca 2040
atctctccag gggcctcaga gaccccagac agaagaggaa cttggacaga ggcttgggtg 2100
ggggtggagg tggggattct gagccgtgga tccaccctct gctgagtgcc aggcctacag 2160
gcaggcaggc agagcaggca agagccgtcc cctacacaaa gggaattggc ccctcatggt 2220
gggacagagg ccagaaccca gctgggccct caaccaccct tctttcctcc acaacccccct 2280
cccagggatg gtggcatccg aagccagcct ggcaagggaa ctggttgcca cgtggggact 2340
tcccggagct gggggtgatg ggaaacaggg tgacgggaaa cgtcctgagg ttgcttcctc 2400
cccttttgtt tggatctcag actgacctgg gaaccaactg ggcagccatg gggtattctg 2460
atggtgggga gttggagggg gagaagggac ctgccccatc ccctcaggct gctttgcaag 2520
ttaaaatagc tgtgaagatc tatctcccag aattctaaaa gctaaaatac cttttgaacc 2580
accaccagac cattatgcct ggagtggaag gatgcttaga ggaatccctt cttttttttg 2640
agatgaagtc tcgctccatc acccaggctg gagtgcagtg gcgctatctc ggctcactgc 2700
aacctccact tcccagggtt caagcaattc tcctgcttta gcctctcgat tagctgggat 2760
tacaggcgtg caccaccacg cccggctaat tttctattt tttagaagag acgagggttc 2820
accatgttgg ccaggctggt ctcgaactca tgaactcaaa tgatccaccc gcctcggcct 2880
cccaacacgc tgggattaca ggcgtgagcc actgtgccca tctcgaatcc ctttttaaaa 2940
cttcaggtat ggctgggtgc ggcggctcat gtctgtaatc ccagcactat gggaggctga 3000
gtcgtgaaga tcatttgagc ccaggagttc aagaccagcc tgggcaacat aggagaactc 3060
gtctctattc aaaaaaatac caaaaaccaa aaaccaaaaa attgtaagtc atgacccact 3120
ggtggatctt gaaattaatt aagtcggtac tctgagtaaa tcagaatttt tttttgagat 3180

ggagtctcac tctgtcaccc aggctggagt gcagtggtgt gatcttggct cactgcaacc 3240
tccacctcct gggatcaagc aattctcctg cctcagcctc ccaagtaact gtgactacag 3300
gtgtactccg ccatgcctgg ctaatatttt gtatttttagt acagacgggg tttcaccatg 3360
ttgcccaggc tggtcttgaa ctcctgagct ctggcaatct gcccacttcg gcctcccaaa 3420
ctgctgggat tataggcgtg agccaccgtg cctggccgca aataaggatt taataatgac 3480
gatgataaaa tagaagggaa aatctcagag cacatcctgg gtagtaatag caaactgtct 3540
tggctgtgtg gtggctcatg cctctaatcc cagcatttta ggaggccaag gcaggaggac 3600
tgcttgaggc taggagttaa aatcagccta ggcaacacag tgaggcccca ttcctacaaa 3660
aaaaaaaaaa aaaagaaaga aagaaaaaat tagccgggta tggtggtgtg tgcctatagt 3720
cctagctact ccagaggctg aggcgggagg attgcttgcg cccaggagtt caaggctgca 3780
gtgagccatg atcgtgccat ggtacggcag cctgggtgac agagcaaggc cccaactctg 3840
aaaaacaaaa taaatacaat aaaataaaat ggtcaaaatg gcctggtgca gtggctggtg 3900
cctgcaacca gagctacttg agaggctgag gcaggagaat cactggagcc caggaggttg 3960
aggcaccact gaactccagc ctgggtgaga gtgagatcct gtctctttaa aaaagaaaaa 4020
acaaaaaaag caaactgtct catgaaactc ttgtttccat gttgcacgct ctgccaggtt 4080
gtgatgtaat gtatttctta ctctgggtca cagtcacaaa accttgaaat gtcactcact 4140
gtcttggctc atgcgtcgta agcctttgtt ccccaacagg gggaagtgaa ccagcacaca 4200
aggcccttcc gtcctgcgga gctcactgcc ttcctcagct cctggcccgc acttccgacc 4260
acacactggg gacacaccct cggggggggcc ccaccccagc agctgcccat gttcacacct 4320
cttcagttat ttcaaactcc gcctctctcg gcctgatgcc caacacttcc ttcacccaag 4380
gaggtcctgt tcaaatatca cttctggcca ggcgcggtgg ctcaggtcta taatcccagc 4440
acttcgggag gccccgaggc aggcagatca cctgaggtca ggagtttgag accagcctgg 4500
ccaacaggtg aaaccccgtc tctactaaaa atacaaaaat tagccaggtg tggtggcacg 4560
tgcctgtagt cccagctact caggaggctg aagcaggaga attgcttgaa cctgggaagc 4620
ggaggttgca gtgagccaag attgagccat tgcactgcgg cgtgggaggc agaggtagac 4680
tctgtctcaa aaaaaaaaaa agtcactttc tctgccagtc atatcttctg caaccctgag 4740
gagccaggca ggacgacccc tttaccctct gaatcaattg gtctgtatca gggtctggca 4800
gagggagggg aagttggccc ctctgattta atggatgaat caagaaaatg tgtgactgag 4860
ccatggattc atggggatgg ggtcctggag cagaggcttg ctgtgcacct actaggtgct 4920
gtgtacctca caagccactg gggacatcag accaccagaa taagtccact ttccccaagg 4980

aaagtggtca aatgtgggag ccaggtgtgc aaatccccac cccagggtga taacagcccc 5040
aataaaggca catgcaaggg ggaccttcgg agctgatgac actgtacagg catctaagag 5100
gctggtgaca gggtcaccaa gcagaggtct agagcagggc tgagtggggt aggggggtt 5160
cttccaggca aaaggcaaaa actctgttgg taccgtgtag gtcttccaca gcacatgcca 5220
catgagaaga aacattcgcc tggcgagtgg ctgaagtcta taatcccagc actttgggag 5280
gctgaggcag gtggatcgct tgagccaaag agtttgagat cagcctgggc aacatggcaa 5340
aaccccgtct ctacaaaaaa tacaaaaatt agccaggtgt ggtaacccat gcctgtggtc 5400
ccagctactc gggaggctga ggtgggagga ttgcttaagc ctaggaggtc aaggctgcag 5460
tgagccatga ttgtgccacc acactccagc ctcagtgaca gagtgagacc ctgtctcgaa 5520
aaaaaaaaaa aaaaaagaga gggaaaggaa aaattttatt ttacatttat gtattgaggg 5580
cagggaccat gcctgctggg ctgctcacca ctgctgagca ggattcctgg tgtggcatcc 5640
taacacaata aatatttact gaatgtgtac tcaggaaact gcaaagggtt caggctggcc 5700
tgagagtaaa gtgaaagaag gaagtggtag aagagcccag aggtctgtga ccccagaacc 5760
tggagggcac ctgtggcctg ggtctttctc ctgcaggcac tggggaaaag tcggagggtt 5820
tattttattt aattaactta tttattaatc aattaatttt ttgagatgga gtctcactct 5880
gtcacccaag ctggagtgca gtggtgcgat ctcagctcac tgcaacctct gcccaccggg 5940
ttcaagcgat tttcctgcct cccgagtagc tgggattaca ggcattcgcc accatgcccg 6000
gctaattttt gtatttttag tagagatggg gtttcaccag gctggccaag ctggtctcga 6060
actcctgacc tcaagtgatc ctcctgcctc ggcctcccaa agtcctggga ttacaggtgt 6120
gagccaccgc gccaggccgg taggagggtt taaacaggaa agagataagc agtcagattc 6180
atagtttaga aaatcctcag gttctggtgt tcgggtggat gcctggagtg gggatctgga 6240
aatcaggggc aggggttagt aataacccag gtgaggagac ttgagtctag aggcagccaa 6300
gtggggacct atggaggagt tcacgtgctg caggtgtgcg ccgccgaggc ggagccaggc 6360
tctggagctg ccaggggctc agaagcctcc ctctcagatc tctccccttt tggccacaga 6420
tgggaaggag agaggcactc acccgaccca gcgtggcagt acagtagtgt ccaacctgtc 6480
actgttgggc gtggtggcgt gtacctgtag tcccagctac tgaggaggct gagatggcag 6540
cagcacttga gcccaggagt tggaggctgc agtgagccga cagcgccact gaactctagc 6600
ctgggtgaca gagcgagacc ctgtctctaa aaaacagaaa agaaaaatta caggtcgggc 6660
gcagtggctc acgcctgtaa tcccagcact ttgggaggcc gaggagggtg gatcacgagg 6720

tcaggagttc aagaccagcc tggccaatat ggcgaaaccc cgtctctact aaaaatacaa 6780
aaattagcca ggcgtggtgg tgtgcgcctg tagtttcagc tacttgggag gctgaggcag 6840
gagaatagct tgaacccggg aggcggaggt tgcagtgagc cgagatcacg ccactgcact 6900
ccagcctggc aacagagcga gactctgtct caaaaaaaaa aaaaaaaaaa aaaaaaaaag 6960
aaaaagaaga aaaagaaaaa agagaaagaa ggaaagaatt acataacagt aagcaaccta 7020
gctagatttg aaccaggccc tgcagttcta aagcactggc ttttgcggag cggcactcac 7080
tccgcatcgt ggcataggta gatttctttt ctaaaggtga ggtcagtgct gggcacttag 7140
caggcgcccg gtgggctgcg ccgtcctgga ggaaggctga ttcctcccac cccgactcct 7200
ggctcgtggg tgggtaatcc agcacattct ccccaccccg gcaaccaact ttgtggccga 7260
acaagccctc cccggcttgt tccgctggtc ccaggcgcct gcgcatccgg acacgatgag 7320
gagcaggtgc gcggggccgg ggtgtgttcg agggggtcgt gcgcgcctgg gctgcctccc 7380
cgcggacggc ggactgggcc ggggcggcgc ttcctggcag agaggcgcgg aggggcgtgg 7440
ctttggagag gtgcccccgg cgggctggcg gcctggctgc ggtgaaaggc gggcggacgc 7500
aggtgacgac aaccgctcca taaagggcgc cgcggcgcga cgctcgcctt atatgggcag 7560
gctcggcgcg ggaggggcgg ggcgttccac ccagctggct ccgcaccgag gcccggccga 7620
accccccgagg ggggaaactt ctctgcgagg gtggagcctc ctcagcggcg tccccaggtc 7680
ccgagagggg tccctaccca ggctaagact cacgacgggc tccaccctgc aggggctcaa 7740
cttgcagaaa ccctggggcc tgccttcccc aggggtctgc cctcctcagg ccctgctagg 7800
gcactgactc ggtttgtgct gtgtggcgtt ttttccttca ccccacctgg gccgcaggtc 7860
ctcgctagat agccgaggga gggtccttta agtgagctca cctcggagcc cccagataac 7920
caagcctgag cctcccggct acatggcgag gcttccccaa tccggtcagc cccaagcagg 7980
tgcctttctc taactggcac aaaggaagtc tcctagccag gctgagccca agcctcggta 8040
aacatgagcc ttggatccac tggaagtgtt tggctaactg ggcccttctt ggccagacaa 8100
gactttaacc ctaagaggaa gctgccagca tgacgcagcc caccatattc tccctccaag 8160
ctctcttcat agcccgggtc cttaaaaacc caaatctgtc caattgctac ttgccgtcca 8220
ctcgttgaca gttactccgc ttcacagcct cccgatcacc tgagtgtcct ccctcggctc 8280
agtgcacagg gctctgtgag cttacagttc cctggttgcc gttccgtgcc tcccagccct 8340
gcacctgctg ctcctttctg gaaagccctt tccttgcaca ctcccagaca cgtgctcacc 8400
cttcagagag atacttctta gcgtcttctt cctgacattt gtagtgatta cttaaccttt 8460
ctgagcatca atttcttcat ctgcaagatg gggtaaaat aatccccacc tcactgtgtt 8520

attgtgagga tcgaatgagt taatgtttgt aaaatgcctg gcatatagta gctgctcatg 8580

aaaaactcgt tgaccaaatt cctcttcctg tgctctaatt gctcatgtat gtgttgtgag 8640

tgccatgaag gctggcctct tccttttcca gctatgcata cctagttcct ggcacatata 8700

tagatcttga accagtgttt gttggcgaat gaatgaattt caggcagtag gggtcgggga 8760

gagaagagac ccctaactgt gatggtcatc aaccctcaca tctgccggga tgtagggcat 8820

tctaatgctt ccccctcag ttgcccagag cttcatggca accaggaggg acacagcatg 8880

gatatggacc ccgttttcca gataaaccta tgagtgatta gaggtgaagt aacttcccca 8940

cggttacaca atgagtggaa gagtcggcat cagggtgacc aacgtgtact ttttttttt 9000

ttttttgaga cggagatttg ctcttgtcgc ccaggctgga gtgcaatggc gcgatctcgg 9060

ctcactgcga cctctacctc ccaggttcaa gcaattctcc tgcctcagcc tcccaagtag 9120

ttgggattac agttgcccac acgcccagct aattttgtat ttttagtaga gatggggttt 9180

cttcatgttg gtcaggctgg actcaaactc ccaacctcgg gtgatctgcc cgcctcagcc 9240

tcccaaagtg ctgggattac aggcgtgagc cactgtgccc ggcccaatgt gtattattat 9300

tattattatt attttagcac tgagagttcc acgtcccagg aatctcttta gtctcaggca 9360

gccaggatgg ttggtcaccc aagatcaact tctaaacgtt agtctctgag gaccgccacc 9420

ttccaacctc ccctgcaccc gtcccattat tcccaagtat tttactgcgt tcctgaaggg 9480

gacacaggct ctccagccca gaaggtccaa cagattttaa aaagtcacac tctgattccc 9540

caaaaaagtt agactcacag cacagtaggg atgggggaca aggacattgg aagggcattg 9600

aggccaggtg tggtggctca cgcctgtaat cccagcactt tgggaggctg aggcgggtgg 9660

atcacttgag gtcaggagtt cgagaccagc ctggccaaca tggtgaaacc ccgtctctac 9720

taaaagtaca aaaacaagcc aggtgtggtg gtgcgcacct gtagtcccag ctactcggga 9780

ggctgaggca ggagaatcgc ttgaacccgg gaggcaaatg ttgcagtgag ctgagatcgt 9840

gccactgcac tccagcctgg gcgacagagt gagactctgt ctcaaaaaag aaaaaaaaga 9900

aggcccaggt aggagtttgc ttcactttga cagggactca tgggccactc ctgcaccagg 9960

ccctgggcct gggaccagga actgagagaa ggctggcccc cacctgtggg actctagcca 10020

ggtgggggag acagatgtat agacacaatg ccaacagttt ggttcctcga cggctggaga 10080

agggagtgat cgaccagggt ttctgaagaa ccccctcctg acgtggccac tcaccagctg 10140

acctcaggcc tgtcccttcc tttggctggc cctggacctt ctctgtcaac tcaggcagtt 10200

ggagctggtc cctgagggcc ttcctgccct gaagtcatga cttgtgggga gctgagttct 10260

gggaaatgca tcctctggag aggcaccaga ggccgcgcat gcctgagtga gtgtgggggt 10320
gcgccctggc ctcactagcc aaacaccaac ttcatcttcc caggctaccc tggcccgagc 10380
agctccggct ccttccctgc ctgcctcatc ctcccaggcc actgtccagg aagctggcct 10440
ctctgcctgt tccccacagc ccctgggggt ggggccagag tagggcaaaa agggcctggg 10500
cctggcccag cagagcctct gcccctcctt cgggggctcc tgttcttgtg ggctgagagc 10560
tgcagccctg cagccggcct ggctgtggct cagtggtcag ggccaagtgc agagcaaaca 10620
ccctgcccac tgggcagcca tttcacggtc attcccaggc tgcatggggt ccccagtcgg 10680
gcaactaagt gcagatgtga aacaacgagc tttccaagat ccagggattt gacccttggg 10740
aaagagactc cctaagggaa ctgcttcctg tcactcccca accaccactt tgagaaataa 10800
ttttctctcc ctcaacctca ctgccagcct cagtcaagag caaaccgagg actggtagtg 10860
ggagctcagg gccaccttgg gattctctgc tctcgctgct ggctgagccc aggcaaggcc 10920
cctgccctct ctgggcttcc atttccctct cctgctccaa acttgctagc ttccttccct 10980
atctcaacat catagggacc cttcgagatg ggaactacta atagggggaaa tcatatggga 11040
aaccaggctg ggcgcagtgg ctcacaccta taatcccagt actttgggag gccgaggtgg 11100
gaggatcacc tgaggtcagg agttccagac cagcctgacc aacatggtga aaccctgtgt 11160
ctactaaaaa tacaaaaatt agccgggcgt ggtggcaggt gcctgtaatc ccagctactc 11220
aggaggctga gaggtagggg aatcacatga acctgggagg tggaggttgc agtgagctga 11280
gatcctgcca ctgcactcca gcctgggtaa cagagtgaga ctccatctca aaaataaaat 11340
aaaaaatgac catatcctta taggaaccat tattttgaac tcagaatctc agaaaaacca 11400
ggatttgggg cctggaactt tctttgtctt attttgtttt gttttggatt ttttggggag 11460
acagagtctt gctctgtcac ccaggctgga gtacagtggc gcgatctagg cttactgcaa 11520
gctccgcctc ccgggttcac gccattctcc tgcctcagcc tcccgccacc acgcctggct 11580
aatttttttgt atttttagta gagatggggt ttcaccgtgt tagccaggat ggtctccatc 11640
tcctgacctc gtgatctgct cacctcggcc tcccaaagtg ctgggattac aggcgtgagc 11700
caccgtgcct ggctggggcc cggaactttc taaggcagag gcggcagaga caaagaggtg 11760
gctggaggtg gggcagtgcc gagccaagtc tcaggacatc cctactgccg agcctcccct 11820
cccacaaagt aaaccggcag gtgggcagtg caggcggggc ccagctcggg tttcactcct 11880
tccccgctct cggggacaat aaaatgctcc ctttgccctg gaaatcccac ttgtataaaa 11940
tccaaaagaa gaaataagct cttatgttca aacaggtttg ttccaacctc atttataatg 12000
gaaaaatatt aactgaaaaa ttccttagta tccgacaatg gggagaagt taacagtttg 12060

accggagctg agtgacatgc aaaagggtgt ttgtggagtg cagggagctc ctgctgtgtg 12120
tgtgggaggg tggagagggc atggggagag gagcagggac cccagagtca gactgtctag 12180
gtttaaatcc tgtctgctcc ttcctagctg tgtgaccttg agtcataacc caaagccctc 12240
tgtacctcca tgtcccctc cataaactgg cactgggctg ggcatggtgg cttatgcctg 12300
taatcccagc attttgggag accaaggcag gtggatcacc tgaggtcagg agttagagac 12360
cagcctggcc aacatggtga aaccccgtct ctactaaaaa tacaaaaatt agccaggtgt 12420
agtggcaggt gcctgtagtc ccagctactc aggaggctga ggcaggagaa tcgcttgaac 12480
ccaggaggca gaggttgcag tgggccgaga ttgtgccact gtgctccagc ctgggtaata 12540
ggtgacagag cgagactccg tctcaaaaca aaacaaaaca aaaaaaagga gagagagact 12600
tgggggatgt gtgtgcccag aggaaaatcc atgtgaggac ccagcaagaa ggtggccacc 12660
cgcaagccaa gcagagaggc ttcaggagaa accaaccctg ccagcacctt gattttggac 12720
ttccagcccc agaactgtga aaaaataaac atctgttgtt taaaccaccc agtctgtgat 12780
attttgtgat ggctggccta gcaaactaat acacattact aacacacaat aagagaagcg 12840
tttaataggg cgcttaccac gtaattgcat tgtgttctga cattacattt acgatctcat 12900
aaccatgagg agggtcctgt cctcccattt cagagatgaa ggaaactgag gcttggctag 12960
tgacggagag ggctgtgact ggagccagga ctgtgtgact ccaaggcccc accaaagcct 13020
cctcctggga tggaccatgg actttcctgc ctctgtgctg tgcatacgct ctcccttctg 13080
cctggaatac ccttcccacc acttgcctct caggacgagt cccagtcgat tcttcaaaac 13140
tcttcttggc ccggcaaggt ggctcacacc tgtaatccca gcactttgga aggccaaagt 13200
gggtggatca cttgaggtta ggagtttgag accggcctgg ccaacatggt gaaaccctgt 13260
ctctactaaa aatacaaaaa ttagctgggc cttgtggcag gtgcctgcaa tcccagctat 13320
tcaggaggct gaggcaggag aattgcttga acctgggagg tggaggttgc agtgagccaa 13380
gatcacacca ctgcactcca gcctgtgcaa cagagttaga ctgtctcaaa acaaaaacaa 13440
aaaacaactt ttctcaagca tcacctcctt cccatgcttt acccgacaat ctccttttgc 13500
agatgtgctg cttttcaggg cttgcggcca gtctgtactc tgtcaccatg gtggtaaatg 13560
tcatctctcc tgtagcattt agactttaga tgtgtccatg tgtttgctgt gaactcctgg 13620
aaggcagggg ctgtgtcttg ctctagttcc tatcacccag caggcccaga ggggctccgc 13680
acagacgctt gctggctgag gtagccagtt tggcctggag agagtattcc cgcctcagga 13740
gtggatcatg aggaaatgga atctcctgcc tccttgtggg gtgggggttg ggggaggtgg 13800

ataaaagaga ggctccacct ggcacggtgg ctcgtgccca taatcccagc actttgggag 13860
gccgaggtgg gtagatcacc tgaggtcagg attttgagac cagcctggcc aacatggtga 13920
aaccccatct ctactaaaaa tacaaaaatt agctgggcac ctgtaatccc agctactcgg 13980
gaggctgagg ctggacaatc gcttgaatcc aggaggtgga gcttgcagtg agccaagatt 14040
gtgccactgc actccagcct gggggaaaag agcaaaattc catctaaaaa aaaaaaaaag 14100
cggatcaagg tccctactct gggcatgaga ggagggatcc tttgacactc ctgggagcag 14160
cagtgtggca gaggaggagg agcagggcat ggggtcagcc accctcagtc catttcccag 14220
ggtgtggcct taggcacggt cactacctct ctgggcttct gtctccacat gtatgaaatg 14280
gaatcagtcc ctccttccac aggtgttagg tcgaagaagg cacctctggt ggtatcggca 14340
cagaggctgg acactggatg acttctttgc tgggacactg aggtaggggg cagaccagag 14400
acagacagct acttgcctaa gctcacccag caagctggct gaaggtggag aactggcttg 14460
tcctccagtt ggtagttaac agctgtctag caggagtgtt cttgctccca ggagacgctc 14520
cgttggctgc cacagaggta agcgtgagag tgcgctcaga agtggctggg aggcatggag 14580
aacagaggag caggttcagg gtgaattcca gtgggcattc tccaagggtg aggtcactgc 14640
ctccaactcc ctagggctgc ctgagacaca ggcaccacca agccagctcc agagcaggag 14700
gaggtggtgg cagggaccag ggccaggtca cagggctgaa tgtaaggccc tcagcctggt 14760
acagcgacgg gcccctccca tggtgctggg gtccttacct tgggaagccc ggtgtttcct 14820
gtttaagatg tggctggggg taggggaaag gagaaagcca cacagataac acttctggaa 14880
cttccaatcg gtgccagcgt gcttccacct gctgagccgt gacctcattt gcagggactg 14940
tcatgagccc caacttggag atggtgcaac tggggctcaa aatggtgaaa accttgtccc 15000
aaaaggaaag cagtatagct aatgagcaag aacaaagaga atttgaaatt aaagacattg 15060
gggttcattc ttttcccctt ttttaaaatt tatttttggg ccgggcacgg tggctcacgc 15120
ctgtaatccc agcactttgg gacgctgagg tgggcggatc atttgaggtc aggagtttga 15180
gaccagcctg gccaacatgg tgaaaccctg tttctactaa aaatacaaaa attaaccagg 15240
catggtggca aatgcctgta atcccagcta ctcgggaggc tgaggcagga gagctgcttg 15300
aactcaggag gcgaaggagg ttgcagtggg cagagatcat gccattctac tccagcctgg 15360
gcaacagagc aagattccat ctcaaaaaca ataaaataaa taaataaaat ttattttta 15420
tatttttatt ttttagaaca agatctcact ctgtcaccca ggctggagtg cagtggtgag 15480
atcacagctc actatagcct caaactcctg ggctcaagtg atcctcccac ctcaccctcc 15540
caagtagctg ggactacagg cgcacaccgc catgccaggc taattttttt ttaaattttg 15600

tgtaaagaca gggtcttgct atgttgccca ggttggtccc gaactcctag gctcaaacga 15660
tcctcttgcc ttggcctccc aaagtgctgg gattacaggc gtgagccatc gtgtccggcc 15720
acatcggagt tcaaatctga gctctgaact ccattcatgc caagttactt aagccctcca 15780
agcctcagtt tccttgtctg taaaatggcg gtaacaatgg tccctgctgt tggggttgcg 15840
gtggagactc agtgagagga ttcatgtagc acacactcag taagtgccag ctgtcactgc 15900
cagcctattt caccaccgtg aacacagagc ctcagaatgg aaaagcagcc tgcccaaggt 15960
cgcacaactt gcaggtggca caggcaggat ctgaatccag atcagattct tcccgcccta 16020
cttctatcac cgtggaaggg cctgggggg cctgcagcca ggaggtggct ggaaagggag 16080
gttccttgga acaaccagtg gcccaggctt cctgcagagc cggggacccc agccctggcc 16140
agggtaaggg tcacgcctgc agctggtgtt ccaggcatcg gagaggaact gcggctgcag 16200
gcctggcagc cttaccgtcg ccagcatcct gccctccatg gacacggccc caacattgtt 16260
ttctgggccg ttccctgccc agagcccaca cattcgggat ttccgcagct tggccagcac 16320
taccttcgct tcctggagca gctttcccca ggcggccggg gtgggggttg agctggccct 16380
ggcccctggt aggggcaggc actgctcgga aggcagtggc agcagcgccg tcaacatcct 16440
cttgacctga caggtcctta cccgagttct acctcctcag aaacacagcg gccctcctca 16500
ctcccctctc ctgaggccag cgtagaaaag gccctacctc atttccactt tagggtaggc 16560
tggagtgaga gcccgggtta aaatcctagc cctactacaa aggtgctgtg acctgggcaa 16620
gcctcccctt ccctctgcct cacaagggat gctgggtagc ctgaggtgcc ttaggctgcc 16680
ctgacatcag ctcagggatg accggcgccc cgtgctctga ggtctctggg cataataagc 16740
tccttgatga cagggtcagt ttctctcccg tgttctgcaa gtttattttt attattatta 16800
ttatttttga gatggagtct tgctctgttg cccagactag agtgcaatgg tgtgttctca 16860
tctcaccgca acctctgcct cccaggttca agcgattctc ctgcctcagc ctcccaagta 16920
gctgcgatta caggcgtgca ctgccacgcc cggcaaattt ttgtattttt agtagaaaag 16980
gggtttcgcc atgttggcca ggctggtctc gaactcctga cctcaggtga tccacccgcc 17040
tcggcttccc aaagtcctgg gattacaggc gtgagccacc gcgcccggct ccatgttctg 17100
tatatttaga aggaacctgt gtgagtggcc accaaacgtt cactctgaac catgctggcg 17160
ctgcctgcag gtgagcgtgc ctgcccagag tggtgtctca gttgtctcac tgcccaccct 17220
ggcgctccgt ctcctctgtg ggctggcacc tgctccctgg tagggcggag ctgaggggca 17280
caagggagcg tggaagtcaa gcagccagcc cagcaaactc gagcttccac ccctgccgcc 17340

tctctgcagg caaccacgtg cactgggtgt caagaaaaaa tatacagggg ccatatcccg 17400
ggttgtcttc aggctcggga agcctgcgac tttgtcccct ttccccggct tcccaacctg 17460
gtggctaaag gcttccagca ggtgtctgcc aaccccatcc acagtcatgg ggcccaatgt 17520
ggcacccaga gaatgaccgt gggctgacag cccagagcca gcggcatccc cggtgaggtc 17580
agtgtcctgg aattggtcaa acaggatcac caggaggatt ccgtgagcac agccagcatg 17640
actcacggcc atgatcagcc tcacgggcag aggctgccaa cctgggatgg ccacagccac 17700
cggctcacct tgcagggcaa cgcacctttt aaggagggag ctggagcagc gcccgggtcc 17760
tgcctctggc caaggcctct gccacacttc tccacgccca cccgggcaga gaggccagac 17820
ccccactggg ttcaaatttg gcaccacttt tcagacatga ccttgggcaa gtcgatttct 17880
ctgaactgtt tttttcactt atgatatgga aataatactt gcctcacaag agtggaattc 17940
gatgaggtaa tgtgtttaga aagtgcgtgg caaacggtgc cttttaagga gcggcagtgg 18000
ggtccggtgg aaagggccag ggctcgggag tcgaggcgcc ccagcattgt gctctggccc 18060
caccctgggc tcactgggtg tctttgaaag agttactcaa cctccgatct gctctgctcc 18120
cactgtgtca aatgagctga caccacttgc cttgttgcct gttgtgagat gaagatcaca 18180
cacacgccac cttctatcag atgacaggag gcagcgaggg tggttcctgg gggtgggtgt 18240
ggaaggctgc ctggccttga atcccagctc agccactcag gggctttgtg acctggggaa 18300
ggctcctcaa cctctcgggg caggtctcag gtggaatctg aagggcaacg ccttcccgcg 18360
gggctgtgct gagctgagac cctcaaaaca gtgccaggta cctgggaggt gcctcctgag 18420
tctgggcagg tcctgctcat cttaaccagg gcttttggcc tttgcaggat gttcactcca 18480
ccagcttccg tctccactga cgccagttgc tggttttgtc ccctccatgt gcttgtgaca 18540
gaccccaggg tctggggtcc ttcagaggcc acgggcccct ctcctccctc ggtctcggca 18600
gccttcccaa ggcagtcctt gggtgggccc ctggagaatg cagacagttc taatagaaca 18660
gggtgagcct ctgagaacag agcaatacca gccccatggc atccctgggg ccacggagta 18720
gggtgtcagg atccccctgc cgccaagcac ctgattcaca ggaagctggg gcctcatcca 18780
ggcaaccgag ccctaatgac agcttggccc taggagcaag gcagacggaa ggaaggcttt 18840
cttgactggc aagcctggct cccttggcac actcctctat ggccaagggg agctgggggc 18900
caagaggggt tgtctggtcc caaggcccag aagttcctgc aggcacccat gggaaggata 18960
gcctgatccc cacagggcca ggcacctgct ggggcagcca ggagccctgt cagttgggga 19020
ggcctcagaa gggtcaaggg gatcagctgt gggagcccag gtttcagagg caaccacgtc 19080
tggatagaaa ccccagctct gcatcccatg agccacagtg tctacatcgg ggtaatgggg 19140

acaacagcct cttgccttag gagggcacga ggactggcac atggcatcct tagaatagca 19200
gccactgctg acaagcatgt tagtgaacag gaagggctgg ttggagagag tgttgtggag 19260
ttaggggagg atgtggggac agtggacaag ccccctggga aagggtgaca agtgctctga 19320
gcccacacag atgtgacatt gcagatggtg cagacccttg ctttatttgt ctgacttgtt 19380
cacagttcag ccccctgctc agaaaaccaa cgggccagct aaggagagga ggaggcacct 19440
tgagacttcc ggagtcgagg ctctccaggg ttccccagcc catcaatcat tttctgcacc 19500
ccctgcctgg gaggcagctc cctgggggt gggaatgggt gactagaggg gatttcagtg 19560
tgggacccag ggtctgttct tcacagtagg aggtggaagg gatgactaag ttctttatca 19620
cagacctaca aaaaatgaga taattagata ttactctcac tagtttgggc ttcttttttc 19680
tttttctttt tacaaaacag cagctggaaa gagaaatgta ggtggcagac gagccaggca 19740
cgaggtttca gattggaagg gaccaagatg aggaccaagg tgtggctgcc tgactaggaa 19800
cgctgtgggc tggcccaggc tctcgccaca catcctggga gaactgccat aggccctaga 19860
aggagggatg aaaggcgtat gggagggaag acagcggtcc ccggatcagc agcagcacca 19920
ccatcctctg atggcccctg ggcagtccgc cagctcggaa gcactcaggg ctggagcctg 19980
ggctctaagc atgggcccca ggagccagac aggagggagg cagcaggaag ggctggcatg 20040
gaagggctga gttctattgg ggtcccacgc gggcaaggga accaggactc atccctgctt 20100
gtcagccaat cagcttcttc aggaaggcct ccaactgatc ctcatccttg atgcccacaa 20160
acttgtccac cacgtcccca ttcttcatgg ccagcacagt gggcaccgct gacacctggg 20220
tggagaggac aagggggtcc aagtgaattg ggagtgaata cttctcaact gccactcctg 20280
agcctttgtg gggaaggctg gtggcttatc cagggcactg acttcccaaa gccatgggca 20340
ggcctagagg aacatggctc ttctctcggt gcaggggtac tgcagggccc gggggccacc 20400
cgctgaagaa acgtcttcca ttgcgggctc ccaacagtac ccttcctccc ttaaccacaa 20460
gactgactca ctggcccagt ggttttgctg gaatgacagg agagatgaaa ataacccttg 20520
cagctgcagg ccagggctgg gggcagggag gagctcaggg gaagcctggc ccaggaggag 20580
acagaagctg ggggacagtt cgagtcctgg ctttgcactc actagcaagg gggccttggc 20640
cgggtcacag cacctttctg agcctcagtg tccttttcca taaaatgggg gtaatgtcta 20700
cctttagggt ttgggatgaa cattaaagat tcaagtatag gctgggcaca gtggcttata 20760
tctataatcc cagccttctg ggagactgag gctggaggat tgcttgagtt caagagttcc 20820
agaccagctt gggcaatata gtgagaccct ttgtttacta aacccccca aaatattagc 20880

caggcatggt ggtacatgcc tgtactccca tactcgggag gctgaggcag gaggatcgct 20940
tgagcctggg agactgaggc ttcagtgagc tgtgattgtg ccactgcact ccagcctggg 21000
tgacagagac cctgcctcaa aaaaaaagag aaagatttga gtataaagca gagctcaggc 21060
tgggcgcggt ggctcacacc tgtaatccca gcattttggg aggctgaggt gggcagatca 21120
tttgaggtca ggagttcgag accagcctgg ccaacatggt gaaaccctgt ctctactgaa 21180
aatacaaaaa ttagtcgggc atggtggcag gcacctgtaa tcccacctac ttgggaggct 21240
gaggtgagag aattgcttga acctgggagg tggaggctgg agtcagtgga gattgcacca 21300
ctgcactcca gcctgggtga cagagtgaga ctccatctca taaataaata aataaataaa 21360
taaataaata cataaataaa gcagagctca ggttctggcg gacgcaatcc ggctcctacc 21420
agccaggtga gctggggcac gcccctcagt cactaagcct cagtgttctc agatgcagga 21480
tggagatact aagggcactg ccattagagg gcatgaaagc tgaatgaaat aacgcaagta 21540
aaggctcagc acagcgcccg gcaaataagc ttaggaacct ggcattgtgc ctggcatact 21600
gtgggcattc aaaaaacagt ggctacagag ggcacaagga aaagtccaac acaggcccca 21660
cgagagcaca ttagcttgct gctgtgatga gtgacagggt ccagaaactc agggacttct 21720
actggacagc atgagaggag aggcttggcc atacacaacc tgacgcttat tagcaggttg 21780
caggcagatg gcaaggacaa cattcttggt ctgtgaagca tttactcagt tccctcaggg 21840
acctgcatag gttatgtgga acgtggatga ggctgtggcc caccagactg gcattgtgag 21900
gtctctgctg cctgggatcc ctgcctggca ttcgtgggca tttgagaaaa ccatttaaac 21960
agaacaagat aggccggtcg ctgtggctca cgcctgtaat cctagcattt tgggaagcca 22020
aagcgggcag atcacttgag gtcaggagtt cgagaccagc ctgaccaaca tggtgaaacc 22080
ccgtctctac taaaaataca aaaattagcc gggcgtggtg gggcatgcct atagtcccag 22140
ctactcggga ggctgaggca ggagaatcgc ttgaacccgg gaggcagagg ttgcactgag 22200
ctgagattgt gccattgcat tccagcctgg gcgacagagc aagactctgt tcccccccctc 22260
aaaataaata aataaaaata aacagaacaa gataaacaca gacttttctt acatacaaat 22320
taaactacaa agtaagagca gagattcaca caaacatacc aggtcttcac atatcccagt 22380
gctgccctgc cacggcccat cttggaagcc agtaagattc agaatgttca aaaaccatgc 22440
acatggtagt taggaaaggc acgcaggcca gaccatcccg ccctcaccca ctaactttac 22500
gtggcaggcc ctgcacccca ctcctcacgg acactttggg gacaaacaca gcaggtcaca 22560
ggacacagtc cttgtccttg ttagtgcctc aggccccttc aaaggctgtc cctgggctga 22620
tgtgggtggc aaaccctgtc tccaggcaga gcagggcccg aaagagtttg ctccaggaag 22680

cgcctgaagc caccagggcc ttcccaggca ttctttggtg ccctctagtg gtctgcaaag 22740

gcagctggag tgcctcaaag ccggagcctc ttggcagaag cagagagctc agccaccggc 22800

tcccacctgc acactgtcct attcctttaa ttaaaatata tgctttatgc cactgtataa 22860

gaagtggcct aactttttc acggcaagac tctaagttca ctgaagaggc tcagagagtg 22920

gacttagcgt tccttaagaa ctccagatag gcacaagcac agtggctcac acctgtaatc 22980

ccaagtactt tgggaggcca aggcaggagg actgcttgag gtcaggaatt catgaccagc 23040

ctgggcaaca tagcaagacg tcgtctccat aaaaatatta aaaaaaaaaa aaaagaactc 23100

cagatgaagg ccataatgat ctcactcatg taaacctcca cacatgcttg aacacgcaca 23160

gaccctgctg gtgtcaggta gacagcagat gtgctgtcaa tggaggtctg gtcactactg 23220

atcaagggga tattttgaag ttgagcttaa acacacacac gcatacacac atatatacac 23280

acacacacat acacactacc cgcactaggg gctcacagga aacctgagct ggaatgggac 23340

ttccctcgac cctgaggagg cggctgaagc tctgctgctc ctgtgtctgg ctcacacatc 23400

aggaggtgcc ggtgcctgta aacactgcct tacatggaag tgcacagggc cttggcacat 23460

tcttctggaa tgttttgagt gtgaaagagg cagtgactga gccaactgag gggctgagga 23520

aaagatacgc tacgacgtgt tgcctgtcct gttccgtgaa gccacttgga acctcctatc 23580

cttggataaa gaccctctga actcggcagg agtgggggag tgtgtacgtg tgcgcagtct 23640

ctttctgcta acccgtagct cgcctgcacc gccactgagc tccgtgtcct ggtatgtctt 23700

ctcctgtccc accccgatgg catccatctg ttaactcagc taagggccta ccaagggaaa 23760

ggcacagtgc tgggtgctgc gggatgttgc aacctcctcc tcggctcatt gcagagttaa 23820

aaggaaaaga tcgctgtcac atgctgggtg ctttttcgtg tcaggaatga tataaacacc 23880

tctatacact atctcacact ctcctggctg tgggcaggat cattttaacg atgagaatac 23940

tgaggctcaa agggtgagca actgttccaa aatgatgtgg tgtaggacag gcgcggcagc 24000

tcctgcctgt aatcccagca ctttgggagg ctgaggaagg tgaatcatct gaggtcagga 24060

attcgagaca aggccggcca atgtggtgaa accttgtctc taccaaaaat acaaaaatta 24120

ggccgggcgt ggtggctcac gcctgtaatt ccagcacttt gggaggctga ggcaggagaa 24180

gtgcttgaat gcgggagatg gaggtcgcag tgagccgaga ttgcgccact tcactccacc 24240

tgggtgaaaa gagtgagacc ccctctaaaa aaaaaaaaaa aaaaaagctg ggatctgaaa 24300

caagatctgt ttgactttgc agtccagggg atcaaactct gttgtgcttc tgcccagcag 24360

caaagagaga gagacatcta ctgagtccca gcagggggaa gaacgtgggg acgcattaaa 24420

ggatttcatg cttcaaatgc aaaatgccaa gtgctttgta aaagctttta gatatgagag 24480
ggttcttgga aaaacgatta ttgaaaaaat gaactacata acattctggc agaattaggt 24540
agacagtgaa aagatcaaga gtcgccaggc ctggagggag gaggaaggag agatgaacag 24600
gcagaggaga gaggacatgg aggcagtgaa atgactctgg atgatgctag aatgtggaca 24660
ccggctatga cacatttgtc caaacccaca gcaggcacaa caccaagagt gatcccctat 24720
gtaaactttt ggctttgggg gataatgatg tccgtgtagg ttcataagtt gtgacaaatg 24780
gaccaccctg gtatgggctg ttgatagtgt gggaggctgg gcatgcggga ggacagggga 24840
cttatgggaa gtctctgtac cttccccttc ctctcaattt tgccacgaac ctaaaactgc 24900
cctaaaaaca taaaatcctc aaaaagaaca acaacaaaaa atgagatcag tgactgctgg 24960
ggggttaagg gggtgagggg caggaaggag aggtgaactg ctggaaaaca ggggaaccga 25020
gggcggtgga acggttctgt atggcgctgg aatggtggac acatgccatt atacatttgt 25080
ccatgaactt tctcactggc aagcagtctg tgctgagagc ggcagctgag acacggcctt 25140
ccaaagagca gttcctcccc acagaaagtc agtccggggc cttcagaacc agaaagtcaa 25200
tctggggcct tcagaatgaa aaagtcagta tggggccttc agaacattgg cttctctcca 25260
tgtcggctca ggacacccag ccctggcatt acctgggagc ttgttagaaa tgcagtcttg 25320
gtggccgggc gcggtggctc atgcctgtaa tgccagcact ctgggaggcc gaggtgggcg 25380
aatcacttga ggtgaggagt ttgagaccaa tctggtcaac atggtgaaac cccatctcta 25440
ctaaaaatac aaaaattagg ccaggtgtag tggctcacgc ccgcaatcct agcactttgg 25500
gaggccgagg cgggctgatc acctgatgtc aggagtttga gaccagcctg gcaaacatgg 25560
taaaaccttg tctctattaa aactacaaaa attagctggg cgtggtcgtg ggcacctgta 25620
atcccagcta ctcgggaggc tgaggcagga gaatcgcttg aacctgagaa gcggaggttg 25680
cagtgaaccg agatcgtgcc attgcactcc agcctgggcg acagagcgag actccatctc 25740
aaaaaagaaa aaggatttta ggccttaaag aaagccatca tgggggcac tgtagttctc 25800
tcagaggaaa cttcttcctc aggctctctt cagaaagaaa agaggaagga aggaaagaag 25860
gaagggaggg agagagggag ggggtcagga agaaccctgg ctggagcttc ctaaaccctg 25920
caatgatgtc agaccagggt ttggctaaac aacacggctg agaccaagtg atgtgggcct 25980
agcagccttg aggcctttct gtgtgacagc acagtcccca ggcagtggac agggcgggag 26040
cggtgggtgt ggggggagat tgagaggatt ccacaggagg catctccttc tcacttccca 26100
ggcttcaccg caggccttca gtgcccactc ccacaacagc ctcccgggga cggtcctcgg 26160
cattcccgcc accccacgag acactggagc agggcctgtg ggcttctttg catctgcagt 26220

agttaccata gtccctgcac atggctggcc ctcagggggt gtctgctgaa gagttatgaa 26280
tacattggct gaagctgaag ctgtagtgtc tggcagagcc aggaggcctg agacatctga 26340
agcccacgcg tgacctgtgg gaggccctag gagccccagc ccgggctctc acccgaggca 26400
tagccaggca ggggaaagcc aggggcatcc aaatgggcag atagatgcct ccctcactga 26460
gcaatcagtg gccaaacttt ttgaaaaagt gactcacccc tcccccagcc cctgtaaaca 26520
gccctcagtt cctaactccc aaagcaggcc tgctccagtg gtcacctgta gtggccaccg 26580
tgtttgtctg cctggtctcc atctcccctg cttctggtca ttgcagactg atgttccttt 26640
gggtaatcac tccccactcc ctgcgtagct caaggggcgg ccagcctgtt ctcaccccgc 26700
tcccaaccac ccatttcttg ctgcaggaga ctggttcagg gatgggtgcc tctatttgag 26760
ctggtctagt aagagtgaaa cctggacttg tatactctga ggaataaagc ggcctctttc 26820
attcacttgt tacctggagg aggaaggagg gaggggtgaa ggctcactcc ggccaggtta 26880
agatatttca agaaaatcag atatcgagat tttcacatga aatctgagtt tcaaatatca 26940
gcatctgctt cctattactt taaaatactt cgagtgccag actaaaagtg tctgtgagcc 27000
aggttgggcc cagaggctgc caggagcgcc ctcggctctg taacagcgct accttcagca 27060
tggctattca gagaccctcc caatccggct gcattatgct ttccccagct ccgtactcgg 27120
cccttcactc tggccaccca gacaaagtgg gcctctcccc tttctccagg tagtggtctc 27180
caaggcccag aggaagcccc caacccagac acctccaggc acctggcccc tgctggtctg 27240
taagcaaccc aggctcatca gacctcaggg cttttgcttt gcctgaattg ttcttccaaa 27300
gacccacatg cttcagtcac tcccttcctg tttttgccca aaggtcagct tatcagggag 27360
atctacccta tcccaccctt taaaaaagaa acccgctggg cgcggtggct tacgcctgta 27420
atcccagcac tttgggaggc caaggcaggt gggtcacccg aggtcaggag atcaagacca 27480
gcctggctaa catggtgaaa cctcatttct actaaaaata caaaaaatta gccggcgtgg 27540
tggcgcgtgc ctgtaatctc agctactccg gaggctggga caggagaact gcttgaaccc 27600
gggaggcaga ggttgcagtg agccgagatt gtgccactgc actccagctt gggcaacaag 27660
agcaaaactc tgtctcgaaa aaacaaaaac cctgcctcat acgcagtact cccatcctct 27720
cttcctgatg tatttttctc cattgaactt attatctaaa acaggggtca gcaaactata 27780
gttcacaggc ccaatacagc ctactgcttg tttttgtaaa taaagtttta ttgtaacaca 27840
gccatgccca tttgtttgta tagtgtctat ggctgctttc ggctacgagc ccagctgaat 27900
ggttgtagca gcgaccactg ccctgcaatg cttccaatac caaccagtcc tttagagaaa 27960

aagtttgctg accсttgatt taaaatacta gaatgtagac tccacggagg cagagatttt 28020
gtcagttttg ttcactgcct tatcctcaac accaagtaac actacctggc acttgaggga 28080
ctctcaaata tctgctgaat aaacagacaa accaaccaac caagtgagac gactccatgt 28140
ctttgtgcac gctgtttcct cagcccttcc tcctcctctg cgcatccctc atggctcagc 28200
tcagaggttc tctctaacgt gaagcattcc ctgtcccctc cagctccccc acaagcaaac 28260
agtcccttct tcctttatgc gcctcttctt ttagcacttc tatattgaga tgatcttttct 28320
acctgctgtt ctctcctgct agactaggag agatcttgct tggaaacaag atctcatctt 28380
gtgtcagaat cacaaatgct tggcacatcg agctcccaaa tgactgctca ctgaacatgt 28440
gggtagatgg ataaaggaat gtaccaatgt ctgagactaa gtgaatgacc tggtgttttt 28500
gggtcatacg atctacttcc taaaggtggt gaagagagac aggtggctca gaggatcaag 28560
agccacctct gcaaagtgct ctgagctctt aaaagctctc gaaaaaccgg ctgggcgcag 28620
tggctcatgc ctgtaatccc agcactttgg gaggccaagg tgggtggatc ataaggtcag 28680
gagttccaga ccagtctggc caacatggtg ataccctgtc tctactaaaa atacaaaaaa 28740
ttagctgggc gtggtggtgt gcgcctgtag tcccagctac ttgggaggct gaggcaggag 28800
aatcgcgtga acccgggagg cagaggttgc aatgagccga gatcatgcca ttgcactcta 28860
gcccaggtga cagtgagaga ttccgtctca aaaaaaaaaa gctctggaaa aaccaagaca 28920
ccttgcttac tggctacctg tgctccccaa gatacctcct acaccagcta tccctgggcc 28980
tgacacctcc tatactggct tccctgtggc aactccctgt caatccatac ctcatactca 29040
atggcgaggt ctgtgtggtc atcaatatcc accttggcca tcaccacctt cccgtgctgc 29100
ttggccacca tcttctctaa cctcggcccc aggatcttgc agggtccaca ccacctcaaa 29160
aggcgagaaa ggaagcatcc agtcagtcaa aagagcgctc agcatcccct actggcttcc 29220
cagacctgca tctttccaag gaatcttttg cccttattat ctctgtttac catgtttaaa 29280
aattaacaca ccaaatggta atgccaggag attctgcaca tgggaaatct tcacagatcc 29340
cagactttta aaacacaggc ctcatcagaa gactcataat aaaagtgact catttcagta 29400
tatctcagat aaatatactg tcatataaaa ggatatggga ttggaagtta aaaggttcaa 29460
acagaggctt ctcaccaacc agctgattat tctggggccc tagtttcctt tttttctttt 29520
tttgagacgg agtctcgctc tatcccccag gctggagtgc agtggcgcga tctcggctca 29580
ctgcaagctc cgcctccctg gtttacgcca ttctcctgcc tcagcttcct cagtagctgg 29640
gactacaggt gcctgccaac acgcccagct aattttttgt atttttagt agagacgggg 29700
tttcaccgtg ttagccagga tggtctcgat ctcctgacct cgtgatccgc ctgtctcggc 29760

ctcccaaagt gctgggatta caggcatgag ccaccgcgcc cggcctgggc cctagtttct 29820
tcatctgaaa aagagagatt atggctctca aagctattag gagagatcaa ctaaggcaat 29880
gtgggtaaac atgcattgga agctgtgggg atatttcaaa caccatgtgg actcagaact 29940
aaaaggaggg gaaccaatgg cctggagcgt ctacaacgca ccagtccctg gctcactttc 30000
tctgctttta ccaaacacac ccctcaactc tgcaaagaga acacaccttc caaagaaact 30060
gaagcccata cgagttaaga aacctgtgca agattagaga agcacagctg ggatcgatca 30120
caacccaaag ctgtgttgaa agtgttttct ttggccgggt gcggtgaccc acgcctataa 30180
ttccagcact ttgggaggcc gaggcaggcg gatcacctga ggtcaggagt tcaagatcag 30240
cctggccaac atggtaaaac ctcgtctcta ctaaaaatac aaagattagc caggagtggt 30300
ggtgtgcgcc tgtaatccca gcttctagga aggctgaggc aggagaatca ctttaacctg 30360
ggaggcagag gttgaagtga gctgagattg tgccactgca ctccagcctg ggcgacagag 30420
actctgtctc aaaaaaaaaa aaaaaaaaaa aagagaaagt gttttatttc acccacaggc 30480
tactctgatc ccacagcccc tgagttgacc attatcactg ccctgatcat aggtattccc 30540
ctctcgctgg ggaagctcat ccaggacagg cctggtgctg tcatctctat gtatgtggca 30600
ccaaggaaag tgcctggcac tgaatgaaca actcacacca ccccacttcc ttactgaaca 30660
aaatgaggca ttatcccatt tattgttcat ttcggaaggc ctctctggaa tgctcactac 30720
accaggaggc caagacagtt ccacctttca caaacccctg gctgacaact cctattttat 30780
tctcagcact tacttattta tttttgagat ggagtctcac tctgttgccc aggctggagt 30840
gcaatggcgc gatctcggct cactgcaact tccgcctccc gggttcaagc aattctcctg 30900
cctcagcctc ctgagtagca ggtgtggtgg tgcacaccgc acccagccag gcctgacggt 30960
tttaaatgct gaaaaatagg ccgggcataa tggctcacac ctgtaatcct agcactctgg 31020
gaggccaagg cgggagagaa tcacctgtgg tcaggagttt gagagactag cctggccaat 31080
atggtgaaac cccgtctcta ctaaaaatac aaaaaaatta tctgggtggt agtcccaact 31140
acttgggagg ctgaggcagg aaaattgttt taactcggga ggtggaggtt gcagtgagct 31200
gactgaacca ctgcagtcca gcctgggtga cagaatgaga ctctgtctca aaaacaaaaa 31260
aggaaaaaaa accctcaggc ctggcgcagt ggttcatgcc tgtaatccta gcactttggg 31320
aggccaaggt gggaggattg cttgagatca ggaggtagag actgcagtga gccgtgatcg 31380
caccactgca ctctacattc tagcctgggt gacagagtga gaccttgtct ctaaaagaag 31440
aaaaacaaaa acaactcata acactgaaaa acccagtgtg caagacctta tctcctatta 31500

caagtgaaga aagggagcac aaagatatca agtggcctgc ccaaggccac agggtgagtc 31560
agagaaacaa ctggaaagcc agcgaaacaa tctgtcagag acctgaccag aaggcccttc 31620
aatttctttt tctttttttt tttttttgag atggagtttc cctctgtcac ccaggctgga 31680
gtgcaatggc gcgatctcag ctcactgcaa cctccacctc ccaggttcaa gcgattctcc 31740
tgcctcagcc tcttgggtag ctgggattac aggtgcccgc caccacgccc gattaatttt 31800
tgtatttttg gtagagatgg ggtttcacta tgttggctgg gcaggtctca aactcctgac 31860
ctcaggtaat ccacctgcct cggcctctga aagtgctggg attacaggtg tgagccactg 31920
cgtccgacct gaaggcccct gaatttttaa cttatgctac actggtttct cccaggatgc 31980
ctcattcaga gggctttgtc cagcttttgt gtagttgggt gtctagccag gccccaaaga 32040
tctagaaatg aaaaagccca ggctaaaatt cagaaggcca gagggactta aatatctcta 32100
aagcaaactc agatagcact gaaaggaaac tccttcctat gccctgtatg cttgggcacc 32160
acggtagtga caccgataac tttttttttt tttttttgag atggaatttc actctttttg 32220
cccaggctgg agtgtaatgg cgcgatcttc agctcactac aaacactacc tcttaggttc 32280
aagtgattct cctgcctcag cctcccgagt agctgggatt acaggcacac accaccacgc 32340
ctagctaatt ttgtattttt aatagagaca gggtatcacc atgttggcca ggctggtctt 32400
gaactcctga cctcaggtga tctgcccgcc ttggcctccc aaagtgctgg gattacaggc 32460
atgagccacc gcacccggcc gacactgata actttttgcc agcccttctt gcggttttca 32520
tggcaggatg ttaacatcag cttatctgca gggccaggaa ctggtataca ccaaaagcaa 32580
ggtgacagtc atatttttcc aactctggtc catgctaaag atgacgctga gctttctggg 32640
gattgagaaa cagaacatgt gtttcccagc actaacagtc agctttgcag actgttcact 32700
tgtctgtctt ccaccagact gcattcccct tgagggcagg gactgggcct gaccagtctg 32760
tatattgagt ctacatatga gcagcataga acatggccgt gggacacagc aggcattcaa 32820
taaatacttg aacaagtagg accctagtct tctgtggacc cccaatactc actgtgcgtg 32880
gaaatccaca accactggtg tctcactgtt gaccactcgg tcttgaaagt caggtccatc 32940
ctggatatta aaggttgtca aggagatcct cgtggtgtat attgtccggg ctgggttggg 33000
tgttacagtc aggccaccag gactgcattg tggggtctgc agggctctgg aagtgagggg 33060
tggccactga ccctgagagg gcttcctgga gatgacagag gccaggaacc tcctcagaag 33120
aagtcgctga gccatctgtg agggaaagag gcagaagaac tggggcacac aaaaggaagt 33180
cgacacacta gaaaaagatt tggggagtac tcagggctca ggaagaggca gagttggaag 33240
caaaatgcaa ggaaatcata tgtaagattt gtagcgtgga agtgaggaag caatgagaat 33300

caaagggaag gaacagctag gcaaaccaga aggacaggaa aactggcttc acaaccaaaa 33360
agaaatcggg atttagatta taacggaaga atgggaggaa gaaaccaaca gatttaataa 33420
tgtatgtaag gaccaagtac cttacacaca ttattggtct tcctacagca acttccagga 33480
agttgctatt gtactgccca cactgcgagt aagggaagga atacgaggct caagtaagtt 33540
aagtgacatg cccaaagtaa ccccgctatt aaatgacagc caacactgga acccagggtc 33600
gtctgaaaag atgaaacgca acaattcaag gaggaactaa gagtgtgaga ggaaccaaaa 33660
acgaagagac atgtactgga gggaaccaat aaagaaggga catgtgtgga gggaactggg 33720
aaaaatcgga catcaccagg gaccctggct ctccggcgag ctagatcccc ccgcccgccc 33780
ggccgccagc ctgcgcagga acgcgctcgc ggcatgcctc agccgcgaca ccacctcgag 33840
ccaccccac agggctccta cctccctgca atgcgagcgg agggatgcac agcctagccc 33900
tccctgcctg tcaagggcac gcctgtcgtc acttcctcgg gggggacgt acataacgtc 33960
acttccgggt acaggcaggc ggaagagcgt ccctctccaa ttttttttt ttttttttt 34020
ttttttgagc cagagtctcg ctctgttgcc aggctggggt gcagtggcgc gatctcggct 34080
cactgcaacc tccgccttcc gggttcaagc gattctcctg cctcagcctc ccgactagag 34140
gcgcgcgcca ccacgcccag ctaattttt tatttttagt agagacgggg tttcaccacg 34200
ttggccagga cggtctcgat cttttgacct cgtgatccgc ccgcctcggc ttctcagagg 34260
gttgtgatta cgggcgtgag ccacagcgcc catctgtccc tctccaattt gaggggcgtc 34320
tgggattttc cgccaatggg aatggcgggc tgaggcacag ttgaaggggc ggggcctcag 34380
ctacggaccg gaagcaatgg gcaggccgtc ggggaacgga ttggaagagg cgggcgggcc 34440
ctggtctggg cgaaggcggg ggcggggcgg ggcggaaacg gaaggggtgg gcgggcccta 34500
gaggagggac cggaagagga ggtgatggag caggggtagc aatggagggt acttaaggga 34560
gaaaaggcag ttgagaagtc cccgtggttt tggattttgc aaactcttgt tgctttattt 34620
tatttacata tatttattta ttaatgacag agtctcgctc tgtctcccag gctacagtgc 34680
agtggcgtga tctccgctca ctgcaacatc caaatcccgg gttcaagtga ttttcctgcc 34740
tcagcctccc aggtagctgg gattacaggc gcgcgccacc acgccgggct gatttttgta 34800
tttttagtag agacggagtt tcgccatgtt ggccaggctg gtctggaact cctgagctca 34860
agtgatccgc ccgcttcagc ctcccaaagt gctgggatta caggcgtgag ccaccttgcc 34920
tggcctcctg tttataactg gcgctgtcca cttcctacag atgttgacag gttctgtttc 34980
tccatttaat atgtaaagct aagctcctca aaggcatgat gccctttata tgtaaaagaa 35040

ctcaaccggg agtttagggg ccatccttta agtggccctc gtctgtgtcc gcctaaagga 35100
aaacaaatga aaactgaggc gagcctaatt taagcaggga gtttttttgg gtcaagttcg 35160
aagactgcaa ctcggagcag agattcaagt tgtcctgaat atacactcgg attagcagca 35220
gctgaaagag cgtttttaaa agaacaggca gtttccaaat tgttgatcaa agtttttttt 35280
tttttttttt ttttttttga gacagagtct cgctcttgtt gcccaggctg gagtgcagtg 35340
gcgcgatctc ggctcactgc aacctctgcc tcctgggttc aagggattct tctccctctg 35400
cctccccagt agctgggact acaggcgtgc ctcaccacgc ctagctaatt tttatatttt 35460
tagtagagac ggagtttcac catgttggct aggatggtct cgatctattg acctcatgat 35520
ctgcccacct gggcctccca aagtgctgga attacaggcg tgagccactg cacccagcct 35580
tttttttttt ttttttgaga cggagtcttg ctctgtagct aggctggagt gcagtggcat 35640
gatcttggct caccgcaacc tccacctcca gggttcaagg gattctcctg cctcagcccc 35700
ccaagtactt gggattacag gcgagcacca ccacacctgg ctaatttttt atatttttgg 35760
tacagaaatt ttatatttca ccatgttggc caggctggtc tcgaactcct gaccttaagt 35820
tatcgctcgc ctcggcttcc caaagtgctg ggataacagg cgtgagccac cgcgcctggc 35880
cgccctgccc atttttgtat cggttttctg tgtctctagc actttctttt ccacagccac 35940
ctatcaatcc tattcagcac ttccacagta ttttctagag agccaatttt cctgcctaat 36000
tcacattctg aatttcacag gcggaccagt cctgtttgtc cttatgccat agtcacttca 36060
ccctgatcgg cctcaggctt ctcatctgag caatgggaag aatgcctttc tcatagctgg 36120
gctgagggtt gcagtagaga cagaatccac atcattgctg cctgatgact cctgcaggga 36180
aagcctgaga gacacagaga aggctgagct ctcggcgcgc tacaaaaggg ctctcagcta 36240
catggtggct cctctgtcca gctagagctg agctggcctg ggtctggctt agtcacaagc 36300
aggctcaggg cacagctgag aggcaaaggg aaggaagcca ggactggcag cctgggctaa 36360
gggtaaaact tctacctcct accaatattt attgcagtgt ttttcaaact gcaggatatg 36420
gacgtcagtg ggtttgcaaa attaatttag tgggtggtga tctgcttttt aaaaaaacaa 36480
acatggtgcc aggcgtggtg gctcacacct gtaatcccag cactttggga ggccaaggcg 36540
ggcagttcac ttgaggtcag gagttcgaga ccagcctggc caacatggtg aaaccccatc 36600
tctactaaaa atacaaaaat tagccaagcg tggtggtaca cgcctgtagc cccagctact 36660
cgggaggctg ggcaggagaa tggcgtgaac ccgggaggcg gagcttgcag tgagccgaga 36720
tagtgccact gcactctggc ctgggcgaaa gagcaagact ctgtctcaaa aaaaaaaaaa 36780
aaaaaaatag ctctaaggtc ttgcactaac cggtatgacc tgtctggcgt ctttacaggc 36840

agtattggaa tgttataggg agacatacag ggtttaagaa atccatcacg gagaagacct 36900
tcaattatca attataggtt ttaaatttac ctcggctttg aaaggaatag gatacattgc 36960
tttctcttta ctacttcccc aggggtttgt aatttaacat gaaactgagt aatctgtaac 37020
tttcctcgat tctcgtcttt tgaccatacc ttgggatgaa tgagttcttt gtctgtggtg 37080
gggagcaagt ttagggaggg gaggaatctt ccctgattaa tatagaggcc taagccaaat 37140
tttagcatta aatctctcta ataggtttgt tcctgcctct ggaataaaca gaaatttaat 37200
attagctgat ttgcttttat atatgacttt tgttcttttt cccatttggg acattttctt 37260
ttgaagtgac ctatttttaa tctgaaacat ttattttgtc ctctttctct ccctttgcct 37320
ctccctctct gcctcttttt ctctctcact ctttctcttt gcctctctct ctgcctctct 37380
cttcctcttt gactctctcc ctttgccttt ctctctgcct ctctctttcc ctttttgcct 37440
gtctctctct ctttgactct gtctgttctg tcagtctttc tctctcctct aagttttttt 37500
tttctttact tttgagtctc ctggctttac tctttcatac tctatatatt gcctggagag 37560
tgggggtcta ggttcttttt tttttttttt tttttttttt gagacggagt ctcgctctgt 37620
cgcccaggct ggagtgtagt ggcgcgatct tggctcactg caacctccgc ctcctgggtt 37680
cacgccattc tcctgcctca gcctcccgag tagctgggac tacaggcgcc caccaccatg 37740
cccggctgct tttttttagt agagacgggg tttcaccgtg ttagccagga tggtcttggt 37800
ctcctgacct cgtgatccgc tcgccttggc ctcccaaagt gctgggatta caggcgtgag 37860
ccgccgcgcc cagccctcag tctaggttct ttataggttc tggccccctg ggtactttgt 37920
tgtatggtag acagcagaat ttttgccttc tgcttttgtt tttcatcatc ttttcttata 37980
tataccttttt gggcttctct tagaagctct tctataggtt tatctttcca gttctctatc 38040
ttttgtaatt tcttgttaat atctggccaa ctgttagtga caaaatgaag ttttaacatt 38100
ccctgcccaa gaggatcctt gagacctaga ccagtgtatt ttctcatttg ttcctttaat 38160
ctatctaaaa attctatagg cccttcatct ttcccttgct gtatatcaaa tattcgggta 38220
agatactgag ttcggggtac caattttttt tttttttttg agatggagcc ttgctctgtt 38280
gctcaggcta gagtgctgga gtgcagtggc gtgatctcgg ctcactgcaa gctccgcctt 38340
ctgggttcac gccattctcc tgcctcagcc tcctgagtag ctgggactaa aggcgcctgc 38400
cactatgccc agctaatttt tttgtatttt ttagtagaga cggggtttca ctgtgttggc 38460
caggatggtc tcgatctcct gaccttgtga tctgcctgcc tcggcctccc aaagtgctgg 38520
gattacaggc gtgagccact gcgcccagcc tcggggtact gatgctttaa tccccttat 38580

tatcaattcc ttaaggtcct gcatattttc tcggtgggct gcgttgttat tgtcccactg 38640

ggggtcttgg gtgggagttt tttgatctgc tgtaggaacg ttttggccag gagggtgttc 38700

gtgttcctag gctcccatag cagctctatg gatcatgtct ctttcttccc ccgagaagag 38760

gggaaaggga aattctgaat atcttttta cattgctcta tctcacgttg aagtccttta 38820

agggaaaggt acttaggtcg gtagtgagtg ggctcttggg acgattctca agaggcaggg 38880

ttgtaagaaa ggggacatca gagataggag aagggtctgg gacagcagct gcttttgttt 38940

ttggtccttt cattatcctt ctaacatttt aacattaggc ctgggggaat attactgttg 39000

ctagctttct cctttttatc tcttacctta cttggggcat ttcccatctt gggtcctggt 39060

taagctcaat ctcccctgtt ggagatgtct cgcctatcct ttagccccac ctgctggagg 39120

ctccttgcat tcatgcacac tttcaacccc cagaatatcc tgaccaccaa ggaaatactt 39180

tgtcacccct gcgatgtttc ttagcttggt ctctgcacac ttacttggtc gctgtggtac 39240

atgaggatcc tttcccccag gtcgccagcc cgtttctttc tgccttgctg agagtatagg 39300

tttattcgtc acactggttg gtctcgattc cttacccctg tggccaccgc aacaaggcag 39360

tgggacgtgc ctcctcatgg gagaggtcta gaccctcctc agaggaggat gggaatccca 39420

aatgagaccc caaatttgtt agaaataaat tttcagtgcc acaaaagaaa tagcactcaa 39480

acatacattt tctcagcaag gcaattttac ttctatacaa gagtgcgtct catggatggt 39540

gcaatggcga gagcacaccg gaacaaggga ggggaatggg ttcttatccc tgatgcaggt 39600

accccctact gctgtgttgt tcccctatgg gctagggttg gaccgcacaa tctaagctaa 39660

ttctgactgg ctattttaaa gagagcaggg gtataagcca gagtggtggg gtgagaagtt 39720

tagacaggaa agatggttac ggaccaggtg actaaaggtg actcaggtca gagcaggtga 39780

cagaggctag gaggggattg tttactgaaa ctaggggcaa ggagacataa agaatgagga 39840

aattaaaagt taaaatgaag aacaaagaac aggtgagctg aacatactga tacattggtt 39900

ctttggagag gatctcagaa ctcaatgtac ttaacaaatt acaggctaaa acctttgaag 39960

aagaatttat gatatcctac attatcatgg ggtaaacaat tcgtccctga cagaataagg 40020

ctactggagt tctcttcttg taactctggg aaggactaga gggaactgtg tctgcagtgg 40080

ggccaggtag ttaaaaagtc tggactgggc cgagcgtggt ggctcatgcc tgtaatccca 40140

acactttagg aggccaagac aggtggatca cctgaggtca ggagttcgag accagcctgg 40200

ccaatgtggt gaaaccctgt ctctactaaa aatacaaaaa ttagctgggc gtggtggcag 40260

gcgcttgtaa tcccagctac ttgggaggtt gagggaagag aattgtttag acccgggagg 40320

cagaagttgc agtgagccga catcgtgcca ttgcactcca gcctgggtga caagagcgaa 40380

atccattgca aaaaaaaaaa aaaagaaaaa gaaaaagtct ggaccaagcc aagaggggaa 40440
gaggacgtcc ccatgaaaga gctttggatc cagaaagccc gggttcttgg aattcttttt 40500
ctcttttcac ttttgttgta gcatactttg ttcttttta ttttttattt ttttgagatg 40560
gggtgtgggg gctttactgt gggtcttgct ttgtcaccta ggctggagta cagtggctcg 40620
gtctctgctc actgcaacct ccacctccca ggttcaagca attctcctgc ctcagcttcc 40680
caagtagctg ggatgacagg catgctccac catgcccagc taattttttt taccgttagt 40740
agagacaagg ttttgctatg ttggccaggc tggtctcgaa ttcctgagct caggtgatcg 40800
gcccactttg gcctcccaaa gtgctgggat tacaggtgta agcaactgta cccagcgcat 40860
gttttatttt aatttaattt aattaactta tttttgaga tggagtttcc ctcttgttac 40920
ctaggctgga gtgcaatggc gcaatctcgg ctcactgcaa cctctgcctc ccgggtttaa 40980
gtgattctcc tgcctcagcc tctccagtag ctgggattat agacatgtgc taccacgcct 41040
ggctagtttt gtatttttag tagagatagg gtttctccat gttggtcagg ctggtctcaa 41100
actcctgacc tcaggtgatc cacctgcctg ggcctcccag agtgctggga ttgtccttgg 41160
aattctgagt ggatacatga agagttagta agaaccagtg aaaaagcaat cacttatgat 41220
cctgggcttt gaaaaatcac tgtgattatc ttatgcactt acaaatgaga ctaagacgcc 41280
tgatgggaaa gtgcagattg ctggtgagga agggcaatga agaagagact aggaaccaaa 41340
ttcatcatca ttatcacaca aaggcatttg gaaatgtcac cttacacatg gtgagcacat 41400
atgggtgcca gcccgagaca gcaggataag tttcacaaaa cttgaccagg caggttagaa 41460
gcaaggcatg gttcaggatg gcagagggca gggagacaga agggagtagg atgggagaga 41520
agagccagct ggaagatgag tcagggggtg caactgggga gagcagctct gaatcctgct 41580
tctcagtgag aaagttgcta agatggcttt gcagggagct gtcctatcgc tgctcgagat 41640
cagcctgctg ggcctatgat gataagcagg gctgaccctc ttgggctctg tagctaagcc 41700
caaaccctgc tgaaaatggg gcggggaggt tgaggcagtg tgtggcaagt gacacagacg 41760
gggactccca gctgggggtc cctggaatta cttgacatcc cacagctggt gtcttcagca 41820
gtcatctggg gcaacaatcc cacctgccca ttgtggttgt tgaggatatc agagcttttg 41880
ttttaaagcg cttgccacaa actcttaaga tgcggatggg tttcccctgt gaagcactcc 41940
acaggcggga tgcaggccca tctgaggagg ggcttggaag gaagaggagc acttgagacg 42000
gggcagaact gggctggcct ggggctcagc gacagctcca ttgcagacaa actgggctgg 42060
ggaaggcagc tcccacctgg cagaggatgc ccttctgccc cctgacagga gggaggagac 42120

caccgcatcc ccgactttca gccctcacgt gccatctggt ggctttgctg cagacactgc 42180

catgatctga gtggtctttg gcaatcacgc attggcggga gtgtgaggtt gcggggaaag 42240

agggactgac catgggccta ggtggggagg cctggccact gtgcccacag cttaggaagg 42300

gacagtcaga gctcctcttt gttgctatcg acggactgag ccagaggccc tggagccagg 42360

ggggaaccta gtggctcttg gtcgccaagc tgctggctgc tgtcctccag gcgcctgcct 42420

gtgggggcat agtcccgcag gagcctgctc tccactctgt gctgccaaag gctctcggta 42480

ctcacgagtc cctgcatcct caggtacccc tgctggcaaa agggtggcaa cttctggcgc 42540

gtgagggcga acaggaagca ggactctaca caaaagcaaa atgaggagaa tgagccaggc 42600

tgggacatgt ggggaggggt gcagaaaggg gagctgccaa tgccaggtgt gggggcttca 42660

ctgcaggcct tgcctggtat cttccatccc ttgaaactgg gagctgacct ttctgggcat 42720

ctcacgtcca acctgagtag gtcatgaatc atgaccctcc acgaggctcc agggcagggg 42780

gctgccttga cactctggaa gaacaaggct ccaaaataaa agcaaaccac agcaatgcct 42840

cagctcccag acatcagggc tgagcaccgg gctctgcagg caaccacact gggggcgggg 42900

ctccgacctt catgagcaga ccctcggcct ggtgcggctg ggaactcagt ggtcagttcc 42960

actgtgagct cagatctgcc tgcaaagacg cagtccctca acaacatttg agttgcaaat 43020

accatgtgca aagttctgat ctaaacagtg tgggggataa agaaaaacgg gtatatcctc 43080

atctgtccca caacagaaag ctggtgcatg aatcaaattt ggtcaatcat aagatagctg 43140

tggatactta tcatgtagaa atatgaagaa acggccgggc gtggtggctc acgccttaat 43200

ccgacaactc tgggaggccg aggccggtgg atcgcctgag gttaggactt cgagaccagc 43260

ctggccaaca taatgagaaa gaaaccccgt ctctagtaaa aatacaaaaa ttagccaggc 43320

gtagtgacaa acacctgtaa tcccagctac tcgggaggct gaggcaggag aatcactcga 43380

atccaggagg cggacgttgc agtgagccaa gatcgtgcca ctgcactcca gcctgggtga 43440

cagagactct gtctcgaaaa aaaaaagaaa gaaaaagaaa tatgaagaaa caaccaaaag 43500

aagccatgca aagagagaag ctactgaaag gaacaaccgc taggtctggg agttcctcgt 43560

gggaatgaga atgaaggtag ggaaagcggg tgacatagtt tgggtctgtg tccccgccca 43620

aatctcatgt tgaaatgcaa tctctaatgc tggaggtggg gctgctggga ggtgactgca 43680

tcacaggagt ggtttctttt tctttttttt tcttgaggca gagtctccct ctgttgccca 43740

ggcaggctgg agtacagtgg cacgatccca gctcactaca acctctgcct tctgggttca 43800

agtgattctc ctgcctcagc ctccccagta gctgagacta caggtgcccg ccaccacgct 43860

cagctaattt ttgtgttttt taagtaggga gagggtttca ccatgttggc ctggcttgtc 43920

ttgaactcct gacctcaagc tatctgcctt tctcggcctc ccaaagtgct gggattacag 43980
gcgtgatcca gcatccagaa atagatgctg ccatgcgtcc atacagcctg cagaactgtg 44040
agccaattaa acctgtttct ttataaatta cagtctcagg tatttcttta tagcaatgtg 44100
agaacagact aatacagtga gaaaaagtca tttagccaag tacttataag actttaaaca 44160
aacagaagag ctgacacaga tatgggctca gccttctgag ggagttagag acaagggcag 44220
acagagtgtc aggaatgggc tggagtcctt ctgtaactct gagcgagcct tcttgcctcc 44280
ctgagcccct ctatctcaag tgaaaaatgg gcacagcaca aaggatgtcg tgaggcttcc 44340
atgggtgacc aggctgaaag gtgctccaga aatatgactt cctgtttatt tctgactctt 44400
agcatggagg cccctgggag gccaggccat ggcaagcctc tccaagcggg taagagagca 44460
gatgaggaag aggacagcgg gaagactggg agggcagcaa ggtggctgtt tggcaggcac 44520
caccttctga caacatcatc ccttctgcag gggctcaga tgctcagcag aatctggggc 44580
cagcactaac agctgcacat cagctacagt aacagaggga cggctgccac tatgccagct 44640
ggccgcctgc tgggcggatt ctctccagtc caaggcagca gcacacagtg gcctgtacag 44700
tcaaacagtg tctagaaagt gggagacagg aggctaaagg gcctgggaca atgcattggt 44760
gggacccaca actcagggtg ggaattcact ccctcacaca ccctggcatt tttgttgttg 44820
ttggttttga gatggagtct cgctctgttg cccaggctgg agtgcagtgg catgatctcg 44880
ggtcactgca acatccgcct tccgggttca agcgattctc ctgcctcagc ctcccgagta 44940
ggtagctggg attacaggca cccaccactg cccccagcta atttttctac ttttagtaga 45000
aatggggttt caccatgttg gccagggctg gtctcgaact cctgacctca ggtgatccac 45060
ccacctcggc ctcccaaagt gttgagatta caggcgtgag ccactgcacc tggcctaaaa 45120
gtgtatttct tgagaaggtg tgcatttgct tctgtgattt ctatagctca atgatctcat 45180
gaagtttggc cccaaattta cataagcagg gcctactggt tgaatatttt cagagatttt 45240
tctctcccac tctatctagg gccaaaacca tgcatgtcat ctatctcctc ctttggaggg 45300
ttttggctcc cagcttccct actgagatcc aagctttatt ggagtgtctc taaacaggcc 45360
tcccatcctg ctccagctct gtcttcccac ccatacctgg ccctggcgcc ttcccatggc 45420
gcctggccct gctaatcctt ttgaaaagac atattatcag ctgggtgcgg tggctcacac 45480
ttgtaatccc aacacttcag caggctgagg caggcggatc acgaggtcag ttcgagacca 45540
gcctggccaa tatggtgaaa ccccatctct actaaaaaat aaaaaaatta gttgggcatg 45600
gtggcatgtg cctgtagtcc cagcttcttg ggaggctgag gcaggagaat cgcttgaacc 45660

cgggaggcgg aggttgtagt gagctgagat tgcgccacta cactccagcc tgggcaacag 45720
agcgagactc catctcaaaa aaaaaaaaaa gaagacatat tatccattat ttttaggtga 45780
gttgtaattt aacccacggc attgtcggga acagtagtct ggggtttgga tttccagata 45840
tgggtcctga aactccacgg gtcttgggtc tctgtgacct ttcttcaacc tggagctcag 45900
accctttgtc tttctgggag cttaagttac ctgcatagaa gcttcgcaaa tcggtgtcca 45960
aacagttctc caggaagcgc ctcagaggta ggatgtgccc gatcggggca gtccagtctg 46020
ttaagaagtc ttccacgatg tgatggatgg ccgtgggccg aggcaggggc cagtgtgcag 46080
ggcggaacct cacctcctgt tctgtgggga ggagagaggg ggccatgtca gagctgtgag 46140
gctgggcttc ccctcctcgg gccgacacag cacggatccc acacagccca aacacttccc 46200
tcgttcactc gtgctcggct ttcccgacag cctcctatgc tgggctgtgg tcagactgtt 46260
caagagccac ctgcagatat ttgaaaggct gccatgagga agaggaacta ggcttttccc 46320
ttgtggtttc ggaaggcagt gctgaagcta acaacgtgag gctggcgttt ccctaagact 46380
cacatggact gagatctact gtggctgctt tttattttgt attattattt gttggagaca 46440
gtctcgctct attgcccagg ctgtcatgca gtggcacaat ttaggctcac cgcaacctct 46500
acctcctggg ttcaagcgat tcttgtgcct ctgcctccag agtagctggg attacaggtg 46560
cccgccacca caccgagctc atattttaca tttttcgtag agatggggtt tctagtctct 46620
accatgttgg ccaggctggt ctcaaactcc tgacctcagg tgacccaccc gcctcagcct 46680
cccaaagtgc tgggattaca ggcatgagcc actgcgcctg gctgtggctg ctttcaaact 46740
ggcctttctc tgagaagact cagatagagg cgaggggtct cagcactcat ctagttcagc 46800
ttctccctgg tgtgggctcc cttctgtggt gttccagtca gatggccatc gagtcaagac 46860
ttggccgtcg ctattctggg aaacctgaat ttggaggtga ccaattcccc cactgaacag 46920
ctttaactct tagtgcctcc tttttctttt tttttgagac agagtctcgc tctgtctccc 46980
aggctagagt gcagtggcac aatcttggct cactgcagcc tctgcctcct gggttcaagc 47040
gattctcctg cctcagcctc cctagtagct gggactacag gcgcacgcca ccacgctggc 47100
taatttttgt atttttatta gagacggggt ttcactatgt cggccaggat ggtctcgacc 47160
tcctgacctc gtgatccgcc cgcctcggcc tcccaaaatg ctgggattac aggcgtgagc 47220
gaccgcgccc ggcctttttg tttgtttgtt tgtttttttt gagacagagt cttgctctgt 47280
agcccaggct ggagtgcagt ggtacaatct cggctcactg caacctctgc ctcccggatc 47340
ccggttcaag caattctcct gcctcagcct cctgaatagc tgggattaca ggcatgtgcc 47400
accatgccca gctaattttt gcattttttt catgtttttt tagagatggg gtttcaccat 47460

tttggccagg ctggtcttga actcctgacc ttataatccg cttgccttgg tctctcaaag 47520
tgctgggatt acagtcatga gccaccatgc ccagcctctt agtgcctcct tatactgacc 47580
acagacctgc acccgtcact gctacctgct gacacgactt ctgcctttgg gaacaacccc 47640
tgtttaaacc accctcttct acctgactgc ccttcaagct ctgaagcagg gggtgcgttc 47700
ccgaggttgt tcacttattg gtagctactc tgtgcctgca gtgggctggc attctgtgta 47760
cactgtcagg tttaacctca tggaacccta caagaaaggt actgttgtaa tccccatttt 47820
acagagggga ggttgaggct cagagaggtt aagtaatggt ccaaggtcac acagtgacaa 47880
aatgacaggc ctagggattt tgcccagttt ctctgtactg tgttaaccag ctccagttcc 47940
ctctactctt cagacccctc ccgccccacc acagtcagcc gcctctggag acctgcagca 48000
gggccgtgtc cctcttacta cacagtgcct ggcggagagc acgacacccc ccgcatggcc 48060
tgtgccagtc acggtatgtg tcagaatctg gaagcatcgt tcatcattct cggaccttct 48120
gcccaagtgg tctctaggca gagtcccgca gccatcccac ctgtcagctg agcatgtgtg 48180
tgaaggtttc agggtgggtg acaaccttgc agacggtgag gtctgaggag cccacaggtt 48240
ggggaagggc agagacctgc tcaccggtgg ggaggtatct atagtagtag atgacaggat 48300
gaagaaagtt agactgccag gcatcttctg tgtgccccac agaccggtca tcaaagaaga 48360
cgtccttgtc ggggccagag aaatttctgc catattccat gttgatgacg aagagcccgt 48420
gctttgcctt cctccctgtg agtgtctcca gctgggccag catctgtatg gggaactcct 48480
ccaggtactc aaaggccgtg gaattcctgg gagaacagca acgcggggga ggccctcagt 48540
gctgtggcag aggtgagggg tgcagcccgg gggtgagcat gtgtgtgtgc gtgtgtatct 48600
ccccctctaa ggagcgtcaa tcaagcagca cacccctcac ttaacattac tttttcagct 48660
cagctctcac gcacatgtgg ggtagagacc agaaaattcc atgtaacctg aatgggatat 48720
ctggggaaag agtgtcccag gcagagagaa cagtcaggaa aaagccctga ggagtatgtg 48780
agcactttgt gttcaaggaa cagaagaggc cgacgtggct gaggggagtg aacagcaggc 48840
agagggcagg agagggggcc ggaggccttg agaggtcaag gagggctgcg cctcccatga 48900
cgagacgtga ggagtcgtct ggcccgagag gtgacactgc tggttgcttg ggaggactga 48960
gcagagctgg gatcagcatg cctcaggttt ctaaggacca ctctggttac tgtgctgaga 49020
acagacgcca ggccaagtgg ggcggctgtt gtatgggtgc aggtgataca gcctggtgat 49080
cgggaccgag gtggtggtgg tagagcaggt gagagctggt tgggctccag acatcatctg 49140
aaggcagagg tgacaagact tgcccatggt ttgcatgtgg ggtgttgaga caggggtgcc 49200

aggcgtgctg actcacgcct gtaatctcag cactttggga gaccaaggcg ggtggatcac 49260
ctgaggtcag gagtttgaga ccagcctagc caacatggtg aaacctagtc tctactaaaa 49320
atacaaaatt agccaggtgt ggtggcatgg gcctgtaatc ccagctactc gggaggctga 49380
gacacgagaa tcgcttgaac ctgggaggtg ggctgcagtg agccaagatc gcaccactgc 49440
actccagcct gggcaagaca tagtgagact ctgagtcaaa aaaaaaaatt agccaggcat 49500
ggtggtgggt gcctgtaatc ccagctactt aggaggctga ggcaggagaa gtgcttgaac 49560
ccaggaggca gatgttgcag cgagcagaga tcgcaccact gcactccagc ctggatgaca 49620
gagcgagact gtctcaagaa aaaaaaaaga ggggcagggg catggagggt gatgcgaggg 49680
ttttgtgcag aaagcggctg cactacctgc atgtccctga acttggtgtg ctatagcacg 49740
ccctgccttt ggatcgggct gttccctctg actgaaggtt gctcccttgc ttctccctgc 49800
cacctgtctc cccccgcccc tcacccctct gtgctctgca ccgtttcctt ctcaggaact 49860
gtccatcctc tgggatctgc tgcttatcac taaattgact ctgacgatgg tggccggcaa 49920
ggccctggcc tgagggagct ctgagatcca cgtggctgcc tctgactact gctcatccac 49980
gtgatgccaa acactttcca caagtgacct ttactccttc ctttactgct gcaaggtagg 50040
cacaattatc cccattttgc agatgaggaa gaagggctca gagaggctca ctaatgtgcc 50100
cgtggccact cacaggactg tctgtagagt taatgtcatt gtttttcccc agaacaggca 50160
tgttccccac agcagccttc atcttaggaa agaactgggc acctcacacc tggaatagga 50220
agagaagcgc tatgcagcac gtcgggaaag ctgggccgag gggagtaggg tggggacggg 50280
ctactcactc cttcaacagg atgacatcgg ccagcacacc gaacatctgg tagagcccag 50340
aagcctcatt cacgcgccgc acgatggagc tggtcagctg tgtgatgggg agctcagtgg 50400
cgggccaggt gacgctgtgg tggcggtgct ccaggagccg gtgaacagca cgcactggaa 50460
cagccagagg gaggaacggc acgctgcact taccatttta tctctggtca ctgggaggga 50520
tgcccaggcc tcattgaccc ctgagaacgc catacacact ggtctccatg gcccagcgca 50580
aacgcctagg tggtgaacac atgaggggag gagatggcag ctgcctttag agcagggcca 50640
gcaggtattt tctggaaagg gccagacaat ccatattctc tgctttgtgg gtcatacacg 50700
actcagtgat gctgctcaat tctgccccta gtgtaaaagc ggccaagaca acaggcaaag 50760
gagtgagcac agctggagtt ggtctccagg ccagagtcca tctgcccctg cttcaggcca 50820
tctgcacgtg ggagtcccac cggccccacc tcacacaagg aacgtcaagt ccaacacgga 50880
gccttcccca gaaacctccc ccccttcaca gctctgtttc catcagagac gcgcctacag 50940
aaatctttga tttcgccctc tctttcacag cctaaatcca tctgtctcta agttcttttt 51000

ttaaatattt tttattttat ttttttgaga cagggtctcg ctctgttgcc caggctggag 51060
tgcagtggtg cgatctcggc tcaccgcgac ctccgcctcc tgggttccag gaggaaccga 51120
ctcccagaat tgagtccaat cctttgcccg tactgtaaga cccctctgca gtggtcccta 51180
cacttattat tgtagtcctc taacctggaa taaagtccac cttaccgtct tcatttgtat 51240
tatgattttt gagacagagt ctcactctga tgcccaggct ggagcgcagt ggcacgatct 51300
tggctcactg caacctctgc ttcctggatt gaagtgattc tcctgcctca gcctcccaag 51360
tagtagggat tacaagcctg gctaattttt gtatttttag tagagatggg gtttcaccat 51420
gttggtcagg ctggtctcga acttctgacc taagctgatc tgccagcctc agcctcccaa 51480
aatgctggga ttataggcat gagccactac gcccagcctg ccttactgtc tttaaaaaga 51540
aaaaagaaat ataaatattg aatgtctttg agtggcagaa tataaagatt actccccgta 51600
attccctaca ttttcacatt tttgatgctc aggctaggca tggtggctca tgcctgtaat 51660
cccaacactt tgggaggctg aggtgggtgg atcgcttgag cttgggagtt tgagaccagc 51720
ctgggcaaca tggcgaaaac ttgtctctac cacacaaaaa taaaaacaac aaaattagct 51780
gggtgtggtg gtgcacgcct gaagtcccag ccactcagaa ggctgaggtg ggaggatggc 51840
ttgagtctgg gaagtcgagg ctgcagtgag ccgagatggc gccattgtac tccagcatgg 51900
gaaacaggaa gagacgctgt ctcaaaaaaa ataataatac taattttta aagctcagct 51960
gtaagattat gactccattc tttcaaatag actcacctaa ccacctaact gaatactgta 52020
tgcctcactg agtgaatttc aaccaacacc ctgtccttct cagaaggtta accacaggag 52080
caggaacatc taatttttat ttatttattt atttttgaga cagagtttca ctctttttgc 52140
ccaggctgga gtgcaatggt gtgggcttgg ctcactgcaa cctccacctc caaggttcaa 52200
gtgattctct tgcctcagca tcccgagtag ttgggattac aggcgcccgc caccatgccc 52260
ggctaatttt gtattttaag tagaggtggg atttcaccat actggccagg ctggtctcga 52320
actcctgccc tcaggtgatc cacccacctc agtctaccaa agtgctggga tgacaggtgt 52380
gacccaccgt gcctggccac atctaacatt ttagactcct ctccacagaa agggcaccag 52440
tttgctttct atgaaagaag agaagacctt tgtagaaagt gtctttcagg aaagctcctg 52500
ggccttggag tttaattccc ataatggtga gaaaatcacc aaaactctga gcctcagagt 52560
tttacactct tgaggaaaat ggagatttca cacccacctt tcggggtgct ggcggccctg 52620
ccagggtcgt gtgttcagtg ctcagcccac tgaagtcacc caacatgcgt gaattcatct 52680
ctctcacttc ctttttattt cccatttact cctaaaatca caagtatcaa tttttggttg 52740

gggattattt tagtgcaata aatagaatta tgtttttaaa agatatttta gtattttctt 52800
tgtaaacatt ctcaagttgg cagaaaattt ataccсttgg tactgagagt tttgaaaaag 52860
aactgatata atccaattac attttttttt ttttttttga gatggagttt tgctcttgtt 52920
gcccaggctg gagtgcaatg gtgcgatctc agctcaccgc aacctccacc tcctgggttc 52980
aagtgattct cctgcctcag cctcccgagt agctgggact gcaggcgcac gccaccacac 53040
ctggctaatt tttgtatttt tagtagagac agggtttcgc cgtgttgccc aggctggtct 53100
tgaactcctg gcctgaagca atccacctgc cttggcctcc caaagtgcta ggattacagg 53160
cgtgagccat tgcacctggc ctacacttaa ttttatttta tttttgagac caagtctcgc 53220
tctgtcaccc aggctggagt gcagtggtat catcatggct cactgcaacc ttgacttcct 53280
ggactcaagg gatcctcctg cctcagcctc ccaagtagct aggactacag gcgtggactt 53340
ttacacttta tctgatactt tcctaaacat gtcgtcagac cacaaaaacc tgttgtcact 53400
tccccaagac aatttatgac aatgagctac tgacaagcaa tcccctaatg cttctggaca 53460
taggagtaga tttataaacc ctgggatgct gagagtggtt ccgtctgggg acagttctgc 53520
cttctcagct gggctcacct gtgtatcgga atccgtggat gaagccccca gcagatttcc 53580
ggtagtccac cgagtggctg gcagtaccca ggataaacag accccggctt cctttggatt 53640
cgtagctagc tcgaatcagc gggtacttct tgccgaatgc atttcccgag ttaagtctga 53700
gggacctgtc agtggaaagg gctgttcatg aaaatagctg ctatgtaaga ggcacttatt 53760
tatttagtta gttttgagat ggagtttcgc tcttgtcgcc caggttagag tacaatggcg 53820
tgatctcggc tcactgcaac ctctgcctcc tgggttcaaa ctattatcct gcctgagcct 53880
cccgagtagc tgggattata ggctcctgcc accatgccca gctaattttt gtatttttag 53940
tagagaccag gtttcaccac gttagccagc ctggtctcga tgtcctgacc ttaggtgatc 54000
tgtctgcctt ggcctcccaa agtgctggga ttacaagcgc gagccactgc acccagccag 54060
gaggcactta ttacagtggc acttattact ggcactgagt gccttagatt tctcgtctca 54120
tttaaacctc accatgaccc caggaggtgg gtattatcat ctccatttaa gagatgaagt 54180
cggccaggcg aggtggctca cgcctgtaat cccagcactt tggtaggccg aggcgggcga 54240
gtcacaaggt caggagttcg agaccagcct ggccaacaca gtgaaaccct gtcgctatga 54300
aaaaatacaa aaagagttag ctgggggtgg tggtgcaatg gctgtaatct cagctactca 54360
ggagactgag gcaggagaat cgcttgaacc taggaggcag aggttgcagt gagccgagat 54420
tatgccattg cactccagcc tgggcaacag agtaagactc tgtctcaaac aaacaaacaa 54480
acaaacaaac aatgaagtca ggccaggcac agtggctcac gcctgtaatc ctagcacttt 54540

gggaggccga tggaaaggag ggtctggaca ggcacaccag cttctccttt gtctttctgc 54600
accctggtca gaagacaagt gaaagactgg atgctgcttt gataccaaac ctcccgaggt 54660
agtcggcagc aatgtttaaa atctaggctt cataaaatag cccttcaaaa tacaatgata 54720
aataacttaa gcaactaaca ttttattgag cacataatac atgccaagta ctttctttat 54780
tttaagagat agggtctcat tatgttgccc aggttggagt gcagcagcta ttcacaggca 54840
tgatcatagc acactgtagc cttgacctcc tgggctccag tgatcctcct gcctcagcct 54900
cctgagtagc taggtactca tcactgcacc tagctcccag cactttcttt cctttctttc 54960
tcccctctct ctccttcctt ctctcctctc tctttttttg tttttgagat ggagatcttg 55020
cactgtcgcc tgggctggag tccacaatgg cgcgatctcg gctcactgca acctccacct 55080
cccaggttca ggcgattctc ttgcctcagc ctcccgagta gctgggatta ccggcacgtg 55140
ccaccatgcc tggctaattt tttgtatttt tggtagagac ggggtttcgc tacattggtc 55200
aggctggtct tgaactccta accttgtgat ccgcccacct cagcctccca aagtgctggg 55260
attacagcat gagctactgt gaccagccat ctcttttttt ttttgagaca gggtctcact 55320
ctgttgccca ggctggaatg cagaggcatg atcttagttc accacagcct cgacctcctg 55380
ggctcaagta gtcctcccac cttggcctcc tgagtagctg ggaccacagg catgtgccaa 55440
cacacctggc taatttttgt atttttgta gaggtggggt ttcaccatgt tgtccaggct 55500
agtcttgaac tcctgagctg aagtagtatg cctgccttgg cctcccaaag tgctgggatt 55560
ataggtgtga gaccatgagc cactgcacct ggcctctgca cacattcttc tttctttttt 55620
tttttttttg agataagagt ctcgtcaccc aggctggagt gcagtggtgt gatctcggct 55680
cactgcaact tctgcttccc aggttccagc aattctccca cctcagcctc ctgagtagct 55740
gggattacag gcacccacca ccacgcttgg ttaaattttt gtatttttag tagagatggg 55800
gtttcaccat gttggccagg ctggtctcga actcctaacc tcaagtgatc cacctgtctc 55860
ggcctcccta agtgctggga ttacaggtgt gagccaccgc acccagcctc caagcatatt 55920
cttatgttaa tcctcgcaat aaccatatga gaaacaaact ttgaatccca ttttagacat 55980
gagaatactg ggccacagcg tggttaaata acttccgccg aggtcacaga tttggcaagc 56040
agagaatctc aggacaattc cggcacctgt gctctcagcc actacgctat attgccttcg 56100
agcaaattcc cctctgtatt ctctctgagc cggcctttcc aactcacagg tggaggctcc 56160
caatgctgat gaagatctgc tggtgttgct ccaggaccaa gggcctcagg gccacctggg 56220
accctcaatg gtcagagctc atgtcctgga gggaaatcag gcagcactca catccattct 56280

ttgggtgctg tcctgagagc tctgtcgcca gcctactgaa cagccaccct gttcccctag 56340
ggaggggtca ggagggtttg ctaggagagc ccacctcctt ccgcatggaa ctcacttatt 56400
gaaaatggag aagtcaaagt tccagcccag gcagcggatt acccggtcat agggcacgcg 56460
catggcaaag ttgtcattgt cgtcctgggg gagggtgatg gagtcggcac tctggttggt 56520
gttggcttct tccaggaaga atttcggggt gacatggaac ttgcctttgc tgtccttcag 56580
gatggccaga tccgtcaggt cagactcgag cagcccgtcc agggacttga gctggtaggt 56640
atccagcagg ccattgttga tggctctgag cccacagaga atgcagggga gagagactca 56700
gaggaaagct gggcagtgca gctggggtca ggaagggcag gggagggttg gggaggctct 56760
ttccacactc tgggctccca gcacagaaca cacatgcggg gatgtggcct acctgaggtc 56820
tccaacgtag tgggtggccc aggacagacg gacccgggag cggctgagca tatggataaa 56880
gtttgtgaca cccaagatgt tctctgctgt ctcaaaggcc gagttcccac gacccaggat 56940
cagcacattc tggcctacaa agtcctcagg gtccacggac acggactcgt aaccctctgc 57000
atattcggag ccagggaagt caacctggtt ggggactgat aaaccagtgg ctacaaagag 57060
gacgctgcag gcggggacag aggaaagatg gcttagtctc ttagctataa gaccactaag 57120
tgaaaaccac tccctggacc cacccaccca cctgcctggc tccaaccgcc ggcccctaaa 57180
agaaaatagg acattcattc attcattttt cattcattca tctgtttacg ccctcatccc 57240
agtgcacttg agaggctctg cccttgcctc tccctgagct cacagtattt tccctagcac 57300
tgtactgggg gttaaatttg ccctgtgaga gaggagaaga tgacagtatg agaaatggag 57360
aattcaccta actttgcaca tagcagtcag accaggtatg actgctggtg atgaaatgaa 57420
acctgacatt ctactttccc ctttctgagt cctctgacag atacatctat ccactgagca 57480
gtaattctgt accaggccct gtactaagtg tatctgtgca ccatctttct gactcctcca 57540
agcaacctgg aggtggtatg tggcctgctt tacaggtgag gaggcacagg ccctgcaggc 57600
ccatggcttg agagctccta aaagcagcag agccagagtc taaacacaga taggcttgat 57660
tccaaagtcc tgctccttcc attggtgagg atcgccatcc aggggagggc agctggggac 57720
ttggatcctg ccggcttgca gaagaatgct ttgatcacag agtggtttca aaaatagaat 57780
tgaaggccgg gtgcggtggc tcatacctgt aatcccagca tttggggagg ctgaggtggg 57840
tggatctcct gaggtcagga gttcgagacc agcctggcca acgtcgtgaa atctcatctc 57900
caccaaaaat ataaaaaaat tagccgggtg tggtggtgct tgcctgtaat cccagctact 57960
ggggaggctg aggcaggaga atcgcttgaa ctagagaggc ggaggttgca gtgagctgac 58020
ctcgtgccat tgcactccag cctgggcgac agagtgagac tccgtcttaa aaaaaaaaaa 58080

aagcgaaata cccttttcg tccattcctc ccatacctac tggccaatca aggtgtgtgg 58140
ttcgtgtggg gaaggtccca gcttccgcag gtgagctctg gcaccggcct tacctgcact 58200
gatgcacctg gcccttctgg tcagttagga tgaagtagtg gccattccag gcctgtcggt 58260
ccttgtccag agtgacgtgg gcgatggtgg tgttgtactg gacacggagc cccagcgtgt 58320
ccgcgaagtc acccaggtag cgcaccatgt cgcgggcgtc ggggaagtag gcacgcgagt 58380
agtgtctgaa gagcagccgg gggtcgtggc tgagcagaga gttccagtcg tggcggaggt 58440
tgaactcggc gttagccttg cccgtgtacc gcttgttgat gctgatgagc ttgcggtgcc 58500
gcgggtagcg tgtgaagaag ctgccgggcc gcggggcccg ctcgaacact gcgtagtcgc 58560
gtccagcgcg ctgcaggaag taggccatct gcaggcccgc gggcccagcg cccagcacgc 58620
agtagtcccg gcgcgggggc accgacagcg ctgggtgcag ggcgatggcc aggagcagcc 58680
ccgggggacc ccacaacggg gccgcagcgg agaggcccat cctgcagcag atcagagggg 58740
taaggcctcg cacccggccc ggcggctggg agacacgagg cccagaaaga ggcggggcct 58800
gcgggaactc tcactgcaat ctgggtcacg gccaggccca gaagccgtcc tcagagctca 58860
tttgcccgga ctccaccgtt tcaagctggg acttggggct ccccggaatc ccgagcccct 58920
ccatcttatc tccctcaggg tctccttcct caggggcacc ggctccccgc ttatgattgt 58980
agtaacctcc accctgggga aggagagcgt actccccaat tttcccctaa tttgagggtg 59040
cccaacaccc ctttgaacca ccctccaggt tggaccttcc agaggccttg gcccctctcc 59100
agcgaccggg tgggagcctg aagtgggtgt ggcctgcgtg cgccccgccc cctgccaggg 59160
tccgcgcgcc ccaggctctt cggccacgtg acagggatgc cgcgcacacc tgccgcccgc 59220
ccgcgtgcgc ttcaggagcc gccaggtccc tacgcccgca gctccggcct ccccgcctcc 59280
gaccgaaccc tgagaaacgc gcgaacctcc cagccgctcc ggctgcaacc cgtggtctaa 59340
tgaggccgcg cttggctcgc ttgctccgcg gcggctccgc ccctcgcgcc cggaccaatg 59400
gcaggggggcg gggtcacgtg cgcggcgcgc ggcacgccgg gaccagctgg caggctgcct 59460
gctccggccc agcgcgggag aggcgcgcgc gtgctgcgtt cgctgctccg ggggctggta 59520
gaggggcctg ggctagcgc gcacccgcga gggtggaagg tctggagatc cgggatgggg 59580
aactgggtcc ttcgttttaa aaggtgcctc tctacacgga gggaggggag cacgtgattt 59640
ttggagctaa tcctagctct catattccat gaatgtagcc aaacgctaaa actagttggc 59700
ctacccagtt ttgtgggact ggaaaccagc gtggtggagc caggaccgat aagccaatta 59760
acaagcgttt gctacagtga ctcagtgtac tgcttaccaa gtaacataca cgactgtcct 59820

aatcttccac caaataggag aggtgggcaa ggcattgttt ccgacatttg gtagctgact 59880

ggtcaaatgg agacataggg atgaagggat atgtttacaa tcacaggaag tggagcctgg 59940

aattaaaact cagtggaggc aagataaatg gcaggaggaa gataacgtga actggatgat 60000

gaaggttggc ttcccagggg tggcaagtgg cccctgcatg agatttacat ggggagaaat 60060

acgaagtcag tgtaggaacc ttcaaagtcc agtgaaatgg ggctgagtgt tcttgggga 60120

agggcaggtg gaaagaactg cgagcctgca gatttgcatg gctggagatt ctttgaatta 60180

aaaatcgtag ctggggactc cttagaaaaa ttttcctgac ctctcaggcc tacaagtacc 60240

taccaaagaa tgtcatttac tttttctttt tttttttttt ttgagatgga gtctcactct 60300

gtcgcccagg ctggagtgca gtggcgtgat ctcggctcac tgcaagctcc acctcccagg 60360

ttcacgccat tttctgccc cagcctccct agtagctggg actacaggtg cccgccacca 60420

cacccggcta atttttgta tttttagtag agacagggtt tcactgtgtt agccaggatg 60480

gtctcgatct cctgacctcg tgatccgccc gcctcggcct cccaaagtgc tgggattaca 60540

ggcgtgagcc accgcgcctg gccgaatgtc atttactttc ttcagtctgt gtcaacatca 60600

gagaaaagct ccctcagagc agaaattgtc cagtatctga catacggaag tttaagcatt 60660

tgttgaataa gcattgcaac cagagaggtc aggcagaata ctttgccaaa aataaagtag 60720

ggatgtctta tttcttcttt ttgagacaga gtctcactgt cacccaggct ggagtgcagt 60780

gacacaatca tggctcactg cagccctgac cttccaggct caagcgatcc tgcttcagcc 60840

tcccaaagtg ctagggatta caagtgtgtg ccatggcccc tggccaattt ttcaaaaaaa 60900

tttttggggg catatgtgta tatatttatg gggcatatga gatgttttga tagtcatgca 60960

atttggggat gtctgtttct tagtggttgt gaagattatg agaatgggtg ctggcaaaca 61020

agttcctaaa ataattgctg gtcttatgtg gtgaatacag tagtgggaaa ttaaacagaa 61080

ttcgtcaagt atggtagggc cctacgagta ggctgaacct agattgtaag caacaggatg 61140

ctactgggag tttctgaatg taggattact gcagcagtca acttggtagc cccatgcagg 61200

acagataaaa gcagtggaca gctactcggg aggctgaggc aggagaatgg cgtgaaccca 61260

ggaggcggag cttacagtgc ctgagattgc gccactgcac tccagcctgg gcaacagagc 61320

aagactccgt ctcaaaaaaa aaaaaaaaaa aaaaaaaggc agtggaaact gatgcaaagt 61380

attttcaggg aatgagcttg agtcacttcc acttgcttct gttaatcctg ttggacaggg 61440

ccatggtttg caagaggcaa tttggtgaat actggtccaa cctggaaacc cccggcacta 61500

gtcacaccac tttaatctgt tttttaacac tctgtattca cattgaaaac tccccaagta 61560

cactttttct ctccactgct tctaacacag ttcaagaaac cttttgcttg ctgaggttcg 61620

attcattaaa attaattttg tgtttttca agctacttta aaaaaaaac ctgtaacttt 61680

agaaatgctg agcttttttt gagagtctct gtaatccaaa ttggagtgca gtggtgtgat 61740

ctcagttcac tgcaacctcc gcctcctggg ttcgagtgaa tctccagcct cagcctccca 61800

agtagctgga attacaggcg tgtgccacca tgcctggctg ttttgtattt ttagtagaga 61860

cggggttttg ctatgttgct caggctggtt ttgaactcct gacctcaagt gatccaccca 61920

cctcggcctc ccaaagtgct gggattacag gcatgagcca ctgcacctgg cctttttttt 61980

tttgataaag ggtctccttc tgtcacttag gctggagtgc agtggtgtga tcatagctca 62040

ctgcagcctt gaactcctgg gctcaagcaa tcctcccacc tcagcctcct gagtagctgg 62100

gaccacaggt ggaagcatca tgactggcta ataatttatt tttttgcaga gacaggccct 62160

ggtctccctg tgttgcccag gctggtctca aacttctagg ctaaagtgat ccttctgcct 62220

cagcctctca aagtgttggg attagaggtt tgagccacca tgcctgtttc ctcacctcta 62280

caatggtact actcctgcca gcatcacagt tctgtatgag gcttagatac tacagaaagc 62340

tcagcattaa tacctggcag ggtaattact ccatcaagtg tccagaacag aacagtgtcc 62400

acttacatag tttacatagc ctcggctggg tgcggtggct cacgcctgta atctcagcac 62460

tttgggaggc caaggcgggt agatcacctg aggtcaggag ttcgagacca tcctgaccca 62520

tatggcgaaa ccccgtctct actaaaaata caaaaattag ccaggcatgg tggtgcatgc 62580

ctgtaatccc agctactggg gggctgaggc aggaggatcg cttgaacctg ggaggtggag 62640

gttgcagtga gccgagatca tgctactgca ctccagcctg ggcaacaaag tgagattccg 62700

tctcaaaaaa aaaaaaaaaa aaaaaaaaag tttacatatc ctcaacatgc agagctctta 62760

tgacacaatg ctttgtaggg acaggcctga gtgtcaccag cccaagccaa gcttaaaaac 62820

aattcataaa ccattacaca atcacccagt gggacatcca tcaagctctc tgtggcagcc 62880

tccctcaggc gcagcagccc cacctcaccc acaccctgct tcacgctgta ctagtgctct 62940

gcactccagc tcctcacagt gaactctcca aaagcaacag gtggcccttc acacagccag 63000

caggcactca tgcttgtgga aatggacttc ttataacaaa tgaggacacc cagattctga 63060

attccacata gaaattgctg aatctcatcc ccactctgtc aggaatcttt gaagaaacga 63120

ctgtaaatcg ttaatgcagg cagacgatga gggaaagact aaacagatat atattttatt 63180

tcatctgcta aatgtcagag agcaagttag acacacattc cactaagcat caaaggccct 63240

cgtagtctcg gtggaaggac aaactccagc tccacatcac tggtttaagt ttcttcctct 63300

gaaagacaca aaaaatgtaa gagaaatgag ccaggttgtg tgatatgatg ttcactttcc 63360

tttctgaacc tctgctggac tgtgcgtgag ttttcaacac ttccattccg aagttaagcc 63420
tttcagatgc tcacagggct gggcaggtat ttccttcagt caccagctgg tggagcagga 63480
gagacaactt tcaggctatt taacccggag cggagctttt ccctctagac caccggcttc 63540
aatctgggac ttccctcatc ttcctctacc tctgccacag tccagccgct tctctaaaac 63600
accgctatcc tccccaacca cttgatgtga tctaaaggct ctagaagaag ctcttggagc 63660
caaagtgaat gcttcttcat acttaagtct cagggaattc tcgaagtttt atcaaggtta 63720
aagatcacaa tggctacaga gcttgctccc gtgctagccc acagatcact ctagacctca 63780
gaaagtgggc tgctacacac cttcttcttc ctcttcttcc tcctcctctt cctcctcatc 63840
ttcatcagag ctgaaggtgc catcagggag gctgtagaca cggatgacct gcttgttggg 63900
gtccttgagg atgaggtatt tgccctcctc cagcttcatg cagatgtcaa tgacgcagcg 63960
taaaatgccc caggcattct ccacgctcag gttgatctgg ctggcaaact cattaggctt 64020
gaactgctgg gtgcctagga tgacgtggcg tgaggagtct ttcacgtggt accgagacac 64080
ataactaaca ggggaaggga tatcagtggt cagagcaggg cagcacagag acagcaacac 64140
ttgggatcaa atgtcaatta aatggtgata cctggtccac tgctattttt tctttttttt 64200
tttttgaga cggagtctgg ctctgttgcc caggctggag tgcagtggcg ccatcttggc 64260
tcactgcaag ctccgcctcc cgggttcaca ccattctcct gcctcagccc cctgagtagc 64320
tggggctaca ggcgcccgcc actacgcccg gctaattttt tgtattttta gttgagacag 64380
ggtttcatcg tgttagccag gatggtcttg atctcctgac ctcgtgatct gccagcctgg 64440
gcctcccaaa gtgctaggat tacaggcatg agccaccgcg cccggcagtc cactgctatt 64500
ttcaagggaa agggaaaaca tcgtcttctg agttctcagt tctggatttc attgacacca 64560
ttgccctagt tcaggactcc attcagcatg cctgctgttt ggcatttgtc tcctaactga 64620
cccctccatc tctaccccac ccctggattt atctctgcca gtcaattgtc cagtacacgg 64680
ggaggggagg gtcaacctcc ctacccagac ccttcctttc acaagatcag ctgccagctc 64740
ctgcacagga atctcaccca agcttgaggt actcagatcc agccagcaaa gcacagcagg 64800
tccaccgggc caacttgtag ctgttgttct tcagctccgt ggcaatgaca gcccctcgct 64860
gagagtccag cttctgacgc cagtcaacgc cattacagtg ctgcaggaga gccccgttag 64920
agaaacagaa gcaagctcca aatgcccaag gtgctgggac ctcctctggc agagaaggaa 64980
ctccctagtc tgcttgctta gaaagtgggt aggtacgcac taaatcttac catttaagag 65040
acaaagacat agtcccttcc cttgcacagc ctgccgcaca gcagtcactc aacgacttac 65100
aattcctctc ttctaaaagc tcgcctagac agggaatgat ggatggacac acacggacac 65160

acacacacac acacacactt tagaagtgtc atataaacag cagagccaag tgtttactat 65220
gtgttgcgtg gtaaggaagg gcttcacaga ggacgtgtaa cagtgagcca agtggagaat 65280
attggctcaa gtgcaggtgt agccaggagg tcttgatctg agaggcatgg tgggatagga 65340
aagacaggca gagttggcct tagatggggg tggaagcctg cagtgggtgc aaagctgagt 65400
ctgacatttt acataaatgc acacacagta gaaaaggacc ccagagagat cctcttttct 65460
acccatatca tttgtagacg tgggaagttg gacccagagt gaaatgactg gtcaaaggtc 65520
acatgacaga ggttcccaaa ctttcttggt tcatggcaaa cacagggcaa aagaaatact 65580
caagaatttc ttttaaattt tttttctttt tttttttgag acggagtttt gctcttgttg 65640
cccagggtgg agtgcagtgg cacgatcttg gctcactgca acctccgcct cccgggttca 65700
agtgattctc ctacctcagc ctccctagta gttgggatta caggtgcccg ccaccatgtc 65760
cagccaattt ttgtattttt ggtagatacg gggtttcatc atgttggcca ggctggtctc 65820
gaactcctga cctcaggtga tccactcgcc ccggcctccc aaagtgctgg gattacaggc 65880
gtgagccacc gtgcccggcc aagaattcct tttatttagt tagggtcaaa ccatgtatta 65940
gtattctgac aagatgtctc tgtgtttccc taaaaaattt aaaatatcct gcagcactcc 66000
tgtgagtttg ctgtggcaca ttttttggag atggggtctc actatgttgc ccaagctggt 66060
gagttcagga tttgaactca tgaacccaag cgattctccc acctcaggct cctgagtagc 66120
taggactata ggtgcatact actgcataca gcttgctggg gcatgttaga attcttctcc 66180
caatctgcac tgctgatgaa gcgtgtattg gacaattgac tggcggagat aaatcaaata 66240
tagaagttgg gtggaggtag agaaatcagt taggagacaa atgtcaaaca ggcatgatga 66300
aatggggccc tgaactaggg caattatcag tgaaatccag gacagattca gaagacagca 66360
aagccttcta ttttgctaac agcaaaacag aataatgtaa aaaagaagtt ggagatgttg 66420
gaggctcaga gcttaggtgg aagaaagaca atgctgatgg acagctggcc cagaggcaat 66480
gacgggactg gggacacatg gaaggggaag gtgttttagc agaaaaacaa tgggaagtat 66540
aataaatcag agtagatttg agaaatcatt ttcaaagagt tcatggttga ggcctgggat 66600
gggcagaatt ctaagatgac ccccagtgac ccttgccctt gcagagtctc ctccccttga 66660
ctacgggcag aacctatggc taggatcaag tatcaccccc atgatcatcc taccttgtat 66720
gtcaaaaggg attttgcaga tgtaaggccg caaatcagtt taccttaata tacactacct 66780
ggctgggctc acccaaccgt atgagtctct taaatctagg tgtagaggtc ggagacggag 66840
gaagtcagag atctgaagca caagaaggat ctgatgtgct gttgctatct tggagatgga 66900

gggggccatg tgacaaggaa tgcaggtggc ctctaggagc caagagaggc tcccagctga 66960
caactggcag ggggatgggg gcctcagtca tctaactgca gggaaatgaa ctttacccac 67020
aataagaatg ggcttggaag tggcttttct ttcagaacct ccagatgaga actcagttct 67080
atttctattg acaccatgat ttctgccttg tttggatttg tggccccacc caaactgcat 67140
gtcaaattgt aaactccaat gttggaggag gagcatggtg ggaggtgact ggatcatggg 67200
ggcagacttc ccccttttggc actattcttg tggtaagagt attcaagaga tctggttgtt 67260
taaaagtgta taccaacctc ccccctctct ttctcctgct ctggccatga tgtgcctgct 67320
tctcctttgc tttctgccac cattgcaagt ttcctgaggt ctcctcagcc acgcttcctc 67380
tagagcctgc agaactgtga gccaattaaa cctcttttct ttataaatca cccactctca 67440
ggcatttctt tacagcagtg tgacaatgga ctaatacaag gaccaagcac acagcactgg 67500
acttctaacc tacaaaaccg tgagctaata aattggtatt gttaggccgg gtgctgtggc 67560
tcacgcctgt aatcccagca ctttgggagg ccgaggcagg cagatcacct gaggccggga 67620
cttcaagacc agtctgacca acatggagaa accccatctc tactaaaaat acaaaattag 67680
ctgggtgtgg tggtgcatgc ctataatcct agctactcgg gaggctgagg caggagaatc 67740
gcttgagccc gggaggtaga ggttgcagtg agccgagatc gcaccgttgc actccagcct 67800
gggcaacaag agcgaaactc cgtttcagaa aaataaaata aaaaataaaa gtaaaataca 67860
taaatcggta ttaagtcatt aagtttctgt taatttgtta tggtgcgaaa gaaaactaat 67920
acaaagttat ataatacaga agtatgtatg gcgaagagag ctgtccaggt gactccactg 67980
ggatcaaaaa ggaggggagc cagcaaagac gacatgcaaa cggaacaggg aaacgggtga 68040
gaccagagta acgcggtaac acagacggca aaacgacaca ggcacgacgg ccctgaatgc 68100
tttggggagc tcaccaggaa aaatccaaga aaaggccgct ggccccagag cggcaaacct 68160
tccagtgtgc tctttcaaca ggtgatgtgg gcgggggggc ggattgggag gggtggggtg 68220
gaaatagagg aggaaaagtg aaggaagcat gtttctttca aggtgcctct gaagagtcaa 68280
ttctgagcca gatcttagaa tccatgagtt aaagaaatga ggaattgcaa aaaatgtgtg 68340
aaaagattga aggcagtggc tcagtcaatg aaagaagagg tcaaaaagaa gagcggccag 68400
acttacagga aaactgccaa cccagataat aaggagagga aaaaatcaga tgctcaggga 68460
gcagaagtca acaggaggcc acaatggaac agagatgaag aaagtactgg aagaagggag 68520
ttaactggtt cctgcgtaaa aaataagcag aaaagttctt aacacttaac atagttctac 68580
acacacagtc atgctctttc tcagcaagga actaagcaga ggaaaaaact cacaagacaa 68640
aaaaaaacat ccaggtagct ctataagtaa cgaaagggga taagaaacag tttatacaac 68700

ctagcctgcg taaacaggca ctgtagggaa tagagacatg gtgtcaccag gagggtgatg 68760
gagatggcgg ctcaccctgg aatcccactc attgagtgtc ttgatgttga tgaaggacac 68820
ttccccgttg gctccagtca tgacgccatc gtgctcacaa cggacaataa ggtcaatatc 68880
atctccaagc ttccacctgc ggtaactgca gcaaaaaaga aactcatgtg gtcactgggg 68940
attctataga gtggggcccg tgctccagtc tggccacaat acccaccaga gaggtgacct 69000
accggtacgc aacagaggcg atttcattct tatccatgtc gtcctccaca aacgggtttg 69060
ggttggggaa gttgtatctt tccttcccct gcaaaaacaa aggtgtcaca agacagagct 69120
aactttgttg acaaggccaa ggccaatcag tcagacccag cacctctgct tagttgcagc 69180
cctggccagg ttcctggggc ccttgatggg gctctgagct cgctgcctgt tttgtgccta 69240
cttgacccct cccaactgtt agcacctgat gaattagaac aatgacttag taaccatgct 69300
catctctact tcattttttt gccatggcat atattcacca tttgatgtaa atcaatttat 69360
tatttattgt tcactgtgtt tcctcctcca ctatcattaa attctgtaag ggcaggaact 69420
ttgttcaaag tcagagagcc taacatccaa gcccaggcat gtaactcccc tgctaaaggt 69480
ggggactgcg tctgacctgc tcagtcccac aaccaagagc ctagcacaaa gcagatgctc 69540
cacaaacagc agctgattaa ataagaatga atcaatgccc agagactcgt ttcctcacca 69600
ttctcaagca ctgctgggag aaattgtggt tgatgtaggt tgcctccatg gccaggttgc 69660
ggggtgaatt gaaggaatta ccttcatctt gaggggggctc attggcagtc tcactcactg 69720
tcaggaggtc tgcaaaagcg tggcatggtc actcaccatg caacaaagag tcactgacaa 69780
tgtgcgcagc gctgtgggga gatgtggaga ggcaaacaac acaagtcctt ccttcaaaga 69840
actgccctct cctaaagtgg gtctccctgg tgtggaacac ataagcgggg gagtggggca 69900
gctgctccag gataactcaa gatactgtcc aacattcaat tcaatcacac agtaacgaag 69960
ctgtcccttt tcagtcgttt tggattcctc aagagaatga ttttgcaagc tttttaataa 70020
agacctcagg cttcaggctc agaatataaa cacttttttt tttgagatgg agtcttgctc 70080
tgtcacccag gttggagtgc agtggtgtgt ccacggctca ctgcaacctc tgcctcctgg 70140
gttcaagcga ttctcctgcc tcagcctcct aagtagctgg gattacatgt gtccaccacc 70200
acacctggct aatttttgta tttttagtag agactgggtt tcaccatgtt ggccaggctt 70260
ggtctcgatc tcctgatgtc aagtgattct ccgcctcggc ctcccaaagt ggcaggatta 70320
caggttgtga gccaccgtgt ccagcctgtt ttgttaattt ttgagtgaca tggttttcct 70380
ttatggtgta taaatacata tatgtatggt ataaaaaata tatatgtata tacagtaagc 70440

aaacactgaa caaggtatgc aagatggcaa aagtcgaaaa aggggtattt aaatgaataa 70500
catttgggcc aggtgtgttg gctcacacct ctaatcgcag cactttggga ggccaaggct 70560
gatggatcac ttgaggccag gagttcgaga ccagcctcgc caacatggtg aaaccgtctc 70620
tactaaaaat atagaaagta gccaggcgta atggcacatg cctgtaatcc cagctattcg 70680
ggaggctgag gcagaagaat cacttgaatg tgggaggcag acgctgcagt gagccaagac 70740
tgcgccactg cactccagcc tgggtgacag agtgagactc tctgtctcaa ttaaaaaaaa 70800
aaaaaaacaa caaaaaagca acatttggaa gcttgctatt agggtgctgt gaggactcca 70860
aaagctgagg cctcaagcag gtactgcagt gacagtctct tctcctaacc tctaaagagt 70920
gtgggagatt cagacactgc tgctgtcaat tcccttggga agacagacca ctttctatcc 70980
attctctagt accagagact tgttctgtac caacaaaaat actcaatgcc tttgagttgc 71040
tccccaggca cgcttcttac caaagtcaga gttgtctctc ttgtcaaaga agagtttgga 71100
cccaactctc tggacgacaa tatcccagga atacactgag cgggtacagc tcatcagcgt 71160
ggccaggatg gcatcagtgg caaacacatt cccctgagtt tttgccagct gcaaagagga 71220
tcaaagagag aagatggaaa gacactccca ggtctcactg cccactcaca tggatgggaa 71280
agaactcctt tgctgaccac ataaatcctt aataaggagg ccccacctca ttgaccaaaa 71340
acactgcagc cagtgagcca gcaagtttcg ggtggcagtg gcactgcagc accctaagca 71400
cctgctagat tccagccaag tgcttcagat gctttcacct ttgccccagt ggtagtgcta 71460
tgtacatcta ccccttgttg cagatgagag aactaaggct ccagagacta agccaggaag 71520
cgcggcagaa ctgggcttca agtccagctg tgcttaacat ccacatttcc ggtctacctg 71580
gcaaagtgct tttacctata atacatacgt tattcccatg tcttctgttc tttctgcagc 71640
ttcagctgta gaagccgaca gcattcctaa caagggggag aggggcagaa ggaggcgcac 71700
accttgcgga tgacagggtc gtctgtggtg gtgacagtgt ggaagatgcg cttgatgctc 71760
cgcagtggct tctcactcct cgtggtgatg cggtcaaagg ctttgtcgta gtattctagg 71820
gccccacaac actcactgtg ggaagagcag gcaaagacat gcaaagtaag agagataacc 71880
cccagttttt tcttttaagc catacatcca gaagtcttat ccaaaagtct aaaagaggtg 71940
gaaagcaatc tctggccaga gcaggagaga cgaatcctca gtgcttgctc agttcctgtc 72000
cacttaacac ctggcataga acacagcaag cacaactcat ctagcccaac gcccccattt 72060
taaaggtagg gtgaccgagg ctaagacagg agatgactag ttatagaagc acctgggtag 72120
gctgacttct cgtctggtgc tctggtttcc cactacctaa attccaccta cttgtccttt 72180
gaggtaagaa gctatttgaa atgtcaggag aagcaaagat tcctcctgaa gaattgctgt 72240

gtttcttttc ctgacaagag ttttataact taatcttatt gctcttttgc tcaggatgcc 72300
aggaaacaga aatatacagt ttaataatca gcaaattcca ttctgctttc tctttctgcc 72360
aaaagagttg tataactcat ttcttctttc ctcaggatac caggaagtta aaaagaagtt 72420
tgcagtcagt gaacttctgc tttttcccctt ggtcttgatt ttttttttt tgagatggag 72480
tttcgctctt gttgcccagg ctggagtgca atggcaagat ctcagctcac tgcaacctcc 72540
acctccaggg tttaagtgat tctcgtgcct cagcctcctg agtagctggg attacaggtg 72600
tgtgccacca cacccggcta agtttttgta tttttagtag agactgggtt tcaccatgtt 72660
ggccaggctg gtcttgaact cctgacctca ggtgacccac tgcacctggc cggtcttgat 72720
ttttttcaaa tacctctgtt aaccttatga aatgtgtttt gagtaagtgg cttcaaagcc 72780
tttttggaaa tactagggct taagaaaata cccatcacca gctggtccac acacataaga 72840
gcagtgtaga aagtagtaaa agatgctgct tacatgtcct gtggctctga tacttccaag 72900
tagcgcatct tcatcaactg aggaaaatcc atttcctctt tcacttccca atcactacga 72960
acttcaactg aagagtctcg ggtttctgc agttgaaaac cattagagga aaaaaaagtt 73020
atagtccata caaaacataa ataaaagaca ggctaaaaat atgaagagct ggcctggtgc 73080
agtggctcat gcctgtagtc ccagcacttt gggaagctgg ggcaggatga ttgcttgagc 73140
ccaggagttt gaggctgcag tgagctatga ttgcactact gcactccagc ctgagtgaca 73200
cgagatcctg tctcaaacaa caaccacata aaacggaggg gctcagtggc cctttgggag 73260
gccaaggcgg gcagatcacc tgaggtcagg agttcgagac cagcctgtcc aacatggtga 73320
aaccccatct ctactaaaaa tacaaaaatt agccaggcat ggtgatgcat gcctgtaatc 73380
ccagctactc gggaggctga ggcaggagaa cagcttgaat ctgggaggcg gaggttgcag 73440
tgagctgaga tagcaccact gcactccagc ctgggtgaca gagcaagact gcgtctcaat 73500
aaaagagaga aaagaaaaag agcttttatt caataaatgg agtgctgact gttttataag 73560
acagaatccc tgactcccag gaatttatgg tgtggaagag gaccaaaggg atcaaaagtt 73620
caaaagcaaa tggggttcca ctcccaggta atgatgtcac ctgatgaaca tgtagaaggt 73680
cctttatatt tctctcgggt tattaactat tcttgataca gcatcatatc caacaaaatg 73740
tagcttcact tttgcttaca tgtgttctgt tctcagaatg cccacacaag cacacgcagg 73800
tgaacgttca cagcagcatc aataatagtc aaaaagtgaa aaacaactca aatgttcatc 73860
agcatgtgaa tggctcaaaa caacatgatg tataattcaa aggactctta tttggcaata 73920
aacaagaaaa gaagctcatc tgggctgggt gtggtgcctc acgcctgtaa tcccagcact 73980

ttgggaggct gaggtgggtg gatcatctga ggtcaggagt ttgaaaccag ccgggccaac 74040
atggtaaaac cctgtctcta caaaacatat gaaaaaaaa aaaaaaaagc cagacatgtt 74100
ggcacgtgcc tgtaatccta gctacctggg aggctgaggt gtgagaatca ctttaacccg 74160
ggaggcggag gttgcagtga gccaagatcg cgccactggc actgcagctt gggtgacaga 74220
gtgagattcc atcttaaaaa aacaaaaaac aaaaaccaaa aaaaccaaca acagatgaag 74280
cacagctgaa cttgaacaac atgggtttga agtacatggg tctacttaat atgcagattt 74340
tcttcaaaca aacatggatt gaaaatacaa gccaggcgca gtggctcatg gctgtaaccc 74400
cagcactttg ggaggctgag gtgggtggac tgcttgagct caggagtttg agaccagcct 74460
ggggaacatg gcagaacccc ctatctacag aaaatacaaa aattagccag gcgtggtggt 74520
gcatgcctat agtctcagct actcagaagg ctgaggtagg aggatcactt gaacccagca 74580
ggcagaggtt gcagttggct aagattcatg ccactgcact ccagcctggg tgacagagca 74640
agactctgtc tcaaaaaaga aaagaaaaag aaaacagtat tcttgggatg caaaccccga 74700
gtatatggag ggccgacttt tcatatatgt ggctaccaca ggccgaatgt gggacttgag 74760
aatgtgtaga ctttcatata ctgaaggaaa actgtaccga cacatgctac cacatggatg 74820
actcttgaaa acacgctaaa taaaagctgc cagttactaa agaccacata ttgtatgatt 74880
ccatttatgt aaaatgtcta gaacaaaaaa tcccgagaca gaaaacagat tcatagctgc 74940
ctactgctgg gctactgggg gtgctggtgt ttgggtgtgc ctcctggaat tcatttggca 75000
atctggttgc tactgcggca gtgtcgggag gtagggcctt taagagatta ggtcgttaaa 75060
aggaataaat gcctcatgcc cttctctcag gaatgggcta actacccaaa gtttagccct 75120
tttctctgtt gcaccctgct cccgcttctg ctttttctgc catgctatca agcagcatga 75180
ggccctcacc agatgtggct cctgatctgg gacttcccag tccccagaac catgagctaa 75240
agaaaccgct ttataactta cccactctca ggtattctgt tctagcaacg gaaaacagat 75300
caagacaggg tgactgctaa agggtaaggg attcttttga gggtgatgaa aatggtctga 75360
aattgaccag ttacagaact cttcaaatat attaaaaacc actaaattgt acggtatgtg 75420
aagtatatct catctaagct attaataaag acaaccaaat aaacagaacc aaattccaag 75480
gcagaattct ggtataaata cattacctgt gatttctgat cccatttctg cctaacccca 75540
aattgtttct ggaacttttt ctgcagtcga atgcgttctc tggaaagaca gacatatgat 75600
ctcagtgcag acctttaaac cagtggcttc ttcaaaaggc acacgctgcc attctcttca 75660
gctaaacctt accatcacca ctaactcctt taaactacga aaaatgggct tagagaaagg 75720
aagagaccca gacggtgcat actggaggtg ttagaaaagg tacactgcct ccaaatactg 75780

accagatgat tttacttcat ctatagtgac tgttcactga tagttccaat ctggggtgta 75840
gtggccgctg gaccacacaa caccaggagg ctcaaaggac cagcatacag gggcttcct 75900
agagttgacc cacagcagaa ctgagcccag gtaagctcca gagcctcttc ttgcctgcct 75960
gtgtttccct ttagtgcgca tgaccagcac aaggagttag tttcctgccc atgctatctg 76020
ccatgaacca gcctgagaac gacaagctaa aaggggcctt aactggttgt agaaagtatt 76080
ttcctttttt gcagtggtgg ggaatacaac catcctcctg ctttggtcct gtggtttcca 76140
aatacggcca gtctgggaag ggtgtcttgt tccagcagga tgaaaatctc acctctcttt 76200
ctgtttggca ctcttaggca ggatctgcag gttgaactgc aacatgttcc gacgatcttt 76260
gtctctgcgg aggttcctct gggcatcagc aagaaacatc catgttaaaa tcttggagat 76320
ttggctcaca ataggcagaa caagtgggag gtctttggag taaatttagg atgccaaatc 76380
ccaagtttca catcttactc tgtgctttca ctctacggca tcaacagctt gggggtgtta 76440
gggggtaagt gcttggactt tgcttagacc tatactccca tgatatattt ttcattgaag 76500
tatgtttact gggtctcatt agattttctg agtttgcctc tttaaataat aataggcaat 76560
ctgactggac catctactta ataaagtctg cacacagcaa ttaagtgtgg taacaggcac 76620
aggtgcacct tcttatccag cacaaatgtt tttagcatac aagtctgatg tcctagctac 76680
tggcaaacag aaatataaac tatttaaatg catccctgat cctagtgcaa gttcaccttg 76740
gtaccacttg ttatggaacg gtgacccgag attcacgaaa agacctataa tatgcttccc 76800
tctctcatta ggagtcacaa ggtagcattt tttagcaggt gatggccaac agtaacagcc 76860
ccaagatggt gtggttgctg gctcttggcc tacctgggca aatctcattc gattccgctg 76920
gtaggccgtc ttctgtgtgc gcgctgtatc caccagctgg aagctacttt catcctcctc 76980
atggaaataa gcatattgac ttccaccacc aaactgagag gagtacttat ctggaggcaa 77040
aggtgatggc atgtagtaac tgcacccaca gactttacca gatatgcacc agtctaaagc 77100
cttgctattt caagtgtggt cttgagacct gtagcattgg ctgaaagctt gttagacaca 77160
cagactcaca gtcccacccc atacccactg aatcagaacc agcattttaa caagatcccc 77220
ggatgattca tatgcacatt caattttgaa caactctggc ctaaagaact ttctaagcca 77280
agaatctgaa ggactcaaac taacccattt cactctctgc gttattgtgt gagaatctga 77340
ggtatttatt gctaaccacc atctccatta tcaggggccc atggcaggta tgtctaatag 77400
atcacgatat actttcttgc caatctcagc ctcagctatc ctaacttagt tctccaggca 77460
gccacctcca actatctgaa gtggcagaga gaaaaagcct tttatggta ccaggatctt 77520

aaaaccaggg gttttacttt tttttttttt tttttttttg gagacaggat ctggctctgt 77580
caccaggctg gagtacaata gcatgatctc tgctcactgc aacctctaac ttctgggttc 77640
aagtgattgt cctgcctcag ccacccgagt agctgggatt acaggtgcac gccaccacgc 77700
ccagctaatg ttttcaacag gtttttaaaa gggcccaaaa ccccatttta ataggctaga 77760
cctctttaat gaatggtcta agttttgagg gctatttcca aaaatgtggt tattgttaaa 77820
gcccagaata catccctaaa agttatgaat tattgttggc agtttcttcc cattctaaaa 77880
agctttcaga agaaggtcat tagaataaag aacaactttc ccaaggccct gattggggca 77940
ttcagttgca gaaacactta cttgtgtacc tcttatcttg gtatgtggct cctgtccagt 78000
ctgcaaccta cgaagaacaa gaaaagacag agaatgcaca ggtcaaccag gcaagtttct 78060
gcagaaccag aaatccctga gcgcgagagg acagcgtgga agagtctcag aatttgttca 78120
caacacctct gtaagtgccc agctcttcta tgactacacc cagagataac ctttctcagc 78180
tggcatccct ataagaaatt caggagttaa gattttgaga caataaaatc taaacaggga 78240
ctcgagagta gcagccacag ctgcaaagat tcagactcct gctgacaggc atgtaccttt 78300
cctagccgat ctcctttgct gaacggctgg tagggcatat cccgaaactg ctcgggaacc 78360
gcacagggac cccagcctga ggggttgtcc tggatcacgg gtgtcatgaa ctttgccatc 78420
ttccaaaatc tgaaaaatat aaatcatgtg agtagcggca tgaacgaagg cctcagagta 78480
caaaacaccc tccatatgaa gtaagcaaag acataaatga tagaactcaa aaagcaacac 78540
gcaaaatgga accctcaact gttgagcgac tactactgtt tttgttaatt atactgtgaa 78600
tatgtactta aaactgagaa gaatgcaaac aaaactgatt tttcatattt cattaattcc 78660
acgacactct ctttttactg taacatcttt aaaatgaggc tgcaccttgt gtttgacagg 78720
gtgttgtatt gattggtagt ttttcttttt ctgtgttaca taagtgttta aaaaaattta 78780
atggtgtcag atttgataaa atgtcctaat gttttttcaa atatagtaac cttgttttgg 78840
ttctgagata taccttcacc aattcataca aactcaactt ccctaagact tagtagtctt 78900
ttctttcttt cttttttttt tttgagacag agtctcactt tgtcacccat gctggggtgc 78960
agtggcgtgc aacttccgcc ttccgagttc aagcgattct cctgcctcag cctcctgagt 79020
agctgggatt acaggcaagc gccgcctggc tattttctgt gtttttagtg gagacagggt 79080
ttcaccatgt tgtccaggct agtcttgaac tcctgacctc aaatgatcct cccgcctcga 79140
cctcccaaag tgctgggatt acaggcgtga gccaccacgt ccagccacct tagtcttttc 79200
catctgcaaa ataaacaaga tccttgttct aagcactttg tataatgcca cacaagtatt 79260
cagacttgca aaagtgcatt tatgtatata gagtgctgag aaaaaaagat ctttaagtat 79320

atcctgaaat tcaattttcc tttctcattg tttcaatttt ctgccatcaa cgcaaatcct 79380
gtgtgcagtg caagcggaca taaagccagg cagaagaact gccagagggc caaggaggtc 79440
cccacagacc tcaggcccaa agttgccatg ttaaatgttc atgaatactg ccaggcactg 79500
ttcttactgt ttaccactca ttcattcata cagtcctgcc aacaatcctg tgaggtagga 79560
gccaatgtta tccgcactct ccagataaga aaaccaaagc acagagaaat gaagaaattg 79620
cccaaagttg aaatgctagt ggatgaaaaa cgtgaaccaa agcagtctga ccccagagtc 79680
tgcactctgc ataatgctat agccctcttg ggaattaaaa aaccggcgct gtatagcaga 79740
tggctgcccg acacttctat aaaaaaacct atgcatttat cttccgttgt aaccttctga 79800
aaatgcttag aaggcgagtt cctagaggaa aattcactac acaagtattt cttggaggcc 79860
gggcgcggtg gctcacgcct gtaatcccag cactttgaga ggccgaggtg ggcggatcac 79920
gaggtcagca gttcgagacc agcctggtca acatggtgaa acccagtctc tactaaaaat 79980
acaaaaatta gctgggcgtg gtggcgggca cctgtaatac cagctactca ggaggcggag 80040
gttgcagtga gccaagatcc tgccattaca ctccagcctg ggcaacagag caagactccg 80100
tctcaaaaaa acaaaaatca aatgtttctt ggaggctgga gagcaatcaa aagaacaggt 80160
atgctgaact tagtaaactc tcctcaaagc cccatgctgg ggagattgag gcttccttca 80220
gagatgacat ttgggtgaca gcaacacagg atgaacctag aagtttcatc tttctaatag 80280
aaactatagg aagaggacag aagaaaaagg gtggtggtct cagaacaatt tgtattaaat 80340
aaatattgct gagctcctac gtgttaggcc ctataccaga taatttaaca ccattgacca 80400
cccccccacc cctactttag aggcaaaaat ttgaagctca gcctactcaa gcagctgacc 80460
tcatcatttc aaaacagatt tgatttccag ggttgcctgc tgtcagtcca gccttctttc 80520
cattatatta cagctgggca gcagcccgca aagatcaggg gtttgagacc gtacatcata 80580
ataccaagac aacgagtctc aaaacacact ttaaaaaatc gggttctgtc agaagctcaa 80640
gaagggaaga ggcccgaggc tcgacctgca tcacctccct ggaaagccag ggatgagata 80700
ccctggcttt aataaatgtt tttttttta agagcagagc ggaaccagga ggagaaactg 80760
agccgctcag caaaaacgaa gtaacagctg tactagtcac aggggcagga tagggaggtt 80820
ccaagagggc actcagaagg ggctctgtgg ttggcaggcc actacagatc ataagccgtc 80880
catcgctgaa caggggggtgg ggtagattta agatcagaga tcaaatctac ttctctatcc 80940
tagcctccag tttcacaaaa aaggaaagat aacctatgca ctgtgaattc ctaagaacag 81000
gggccaaaca ccgctcagcc tggtacccct aagacctcac tcaaaaagtc agggagtttt 81060

cggccacttc agaaagactt tgttgttacc cctccgtctt aacccaggtg agttaagtga 81120
caatcaaatt cacccagctc atgggcactg agcagggccg agggccaagg acctcaccca 81180
caaggtcgtg tcccgcgttc agtagcgtgc gggacgcggg gcccccgaaa gtggattcct 81240
gccccgccca gcggagggac ggcaacagca ggaagggact aagagaggtc tcttccggga 81300
ggcccccga aggctggacc tagtccgaac cggctccgga gggccgcagg aacctatgaa 81360
acacgccgct cacctgcaat ggcctcggcc ggccgggatg gcaacagatg gtgcgtgccg 81420
gggaccgcgt tagcagcagc actcttgaga aaccaggaaa agaggaaaca tgcgcgcgca 81480
gcgggcgccg ccgtaaacac gaccggcgct gtcgtaaact gctctcccgc ttcctctggg 81540
ttgggcggaa gaactcacga gccgtaaagc gaaggtccac ccggaaatcc gttactgcgt 81600
ttcgccaggc gtcctcatta gcctccgagg cgccgagacg cgagaggtgt gattggcact 81660
acgtcaggcg gtatccgggg acgcccaaag agggcgttca tcactgaaac ttggcggccg 81720
cgcaatcgaa gctcgaggcg gggagcgact ggcgcccttc tgtgtcccac aatgcttcgc 81780
ggcgcgcctc agcccccatg tatcccaccg tcacccgcga ctccccgcct gttctacctg 81840
cctgcttaat gtgaaactca gcgcagggga ggtccgtcgg tgtcttaggc ggtccttatt 81900
gttactcctc cgcctttata gttgtggaaa ctgaggctca gaagtgccaa gtgacctgcc 81960
tagatcagac tgttagttta gggttctaac cgccagagtt caaaccatac ttccgcagtt 82020
ctcaaactta attgtaggac agggatttct ggaacagtgt ttttatttat ttttatttat 82080
tttttgagac agggtttcgc tctgtcgccc aggctgaaat gtagtggcag gatcacggct 82140
tattgcaccc tcgacttctc aggtacaagc gatcctccca gttcagcctc ccgagtcgtt 82200
ggtgtacaca ggcacgcaca accacgcctg cctaattttt gtatttttgg tagagatggg 82260
gttttgctat gttgctcagg ctggtctcaa actcctgagc tcaacagtcc acccactggg 82320
gctagggtta caggcatgag tcaccgtacc cggccagcta atgattttta aaaattttgt 82380
agagacagcg tctcactatg ttgcccgggc tggtctttaa ctcctggtct aaagtggtcc 82440
tctcgcctca gcgtgcggag cagctgaggc tacaggtgca tgccaccatg cctggctaat 82500
ttttttttt agacggagtc ttgctctgtc ttccaggctg gagtggagtg cagtggcgct 82560
atctcagttc actgcaacct ccgcatccca ggttcaggtg attctcctgc ttcagtctcc 82620
cgagtagctg ggattgcagg cgtgtaccaa catgcccggc taattttcct tttagtagag 82680
acggggtttc accttgctga ccaggctggt ctcgaactcc tgacctcagg tgatctaccc 82740
acctcggcct cccaaagtgc taggattaca ggcgtgagcc actgcgtccg gctgcctggc 82800
taattaaaaa aaaaaaaaaa aacttctgtg gagacgaagt ctcatcatgt tgccaaggct 82860

agtctcaaac tcctgggctc aagcagtcct cctgtctcgg tctcccaaag tgctgggatt 82920

acgggcgtga gccaccacac ctgaccagga tagtattttt aaaaattcag attctgggtc 82980

tcattttgat agattatacg gatatgttta tgctggagcc caagagctcc gcattagctg 83040

tgattctgaa gtgacgactc aggaactgct ttactacagt agataacagt gctgtcctct 83100

cagcaactcc caggctatgg agttcctcct ggtgtctttc tttcggaatt ttaaaacaat 83160

gaaagataat ctgagggcat gactttattc aaacctcaga tcctttctac ctgacatagg 83220

tttccttagc cgcctagtat gtctccttta ttagaaaata tacctgaagt ctaggctctg 83280

ccacattctt tttttttct tttcttttct tttttttttt ttgagacgga gtgtcgctct 83340

gttgccaggc gggagtgcag tggcgcgatc tcagctcact gcaacgtcca cctcctgggt 83400

tcaagtgatt ctcctgtctc agcctcctga gtagctggga atacaggcat gcgccaccat 83460

gcccagctaa tttttatatt tttagtagag acagggtttc accatgttgg ctgggatggt 83520

ctcaatccct tgaccttgtg atcccccgc ctcggcctcc caaagtgttg ggattacagg 83580

cataagccac tgtgcccagc cagctctgcc acttgatagc tatgtgtggc cttcacattc 83640

cttgccttgt ttccttattt gtaaattgaa gatgataatt agagggcgct gtgggggtga 83700

aaataaatgt gtgtgaaagg acttagtaat tccacttatc atttgggtga acttggacag 83760

gttattcaac ctcttttttt tttttttttt tttttgaga cagagtctcg ctctgttgcc 83820

caggctggag tgcagtggcg agatctcggc tcgctgcaac ctctgcctcc caggttcaag 83880

caattatctg ccccagcctc ccgagtagct gggattacag gtgcccacca ccatatccgg 83940

ctaatttttt gtactgttag tagagacggg gtttcaccat gttggtcagg ctggtctcga 84000

actcctgacc ttgtgatcca cccgcctcag cctctcaaag tgctgggatt acaggcgtga 84060

gccaccgcac ctggcctatt caacctctct aaacctgctt attcatctga aaaatgagaa 84120

tgctaatagc agcacctatt tccataagct ctctcccaac tgctcatttt tttttttcc 84180

taatttttgt taatggtgtc tggtgaattg tgcccagtgg aaagccttgt agtcatcact 84240

ggtagttcgt ttttccttcc ctcccacatt tagttcttca ctatgttctc tttattctac 84300

ttgcacaatg catcttgaat gctatcactt tttttttttt ttttttttg agacagagtc 84360

ttgccctgtc acccaggctg gtgtgcagtg gcgcaatctc agctcactgc aacctccgcc 84420

tcccgggttc aagcaattct cctgcctcag cctcccaagt agctgggatt acaggcgtgt 84480

gccaccacgc ctgcctaatt ttttgtatct ttagtagaga tggggtttct ccatgttggt 84540

caggctggtc tcgaactctt gaccttgtga tccacccgcc tcggcctctc aaagtgctgg 84600

gattacaggc gtgagccact gtgcccagcc gaatgctatc actttttatc cccatttcac 84660
atcacgcttg gatacactct tgctgctcta gggtttcttc tctatatggt ggtcaaagga 84720
atctgtccac aaccttctac tagcttccca ttatatgctt agagggaaat atgaatatct 84780
ttttgtggcc tgtgtggtca ctgtctacct ttgttatttt taaaatattt acttctttga 84840
gacagggtct tgctctgttg tccaggctgg agtgcagtgg tgtgatcatg gctcactgca 84900
gtcttgacct tttgggctca agcaatcctc ccacctcagc ctccgagtag gtgggactag 84960
aggctcatgc tgccactcct ggctaatttt taattttttg tagaaatggg gtctcactat 85020
gttgccccgg ctggtctgga actcctgggc ttaagccatc ctccagcctt ggcctcccaa 85080
tatgctggga ttacaggtgt aagccacctc acctggccac tggtctacct ctagccacca 85140
tattcttctt gtgccttaaa tacactgaac ttctttcttt ctttttcttt tttttttttt 85200
tgaaacggag tctagctctg ttgtccagcc tggagtgcag tggtgtgatc ttggctcact 85260
gcaacctctg cctctggggt tcaagtgatt ctcctgcctc agcctcccaa gtagctggaa 85320
ctacaggtgt gtgcctccac accaggctag tttttgtatt tttagtagag acggggattc 85380
atcatgttgg ccaggctggt ctcaaactcc tgacctccag tgatccatcc accttggcct 85440
cccaaagtgc tgggattaca ggcgtgagcc actgtgccca gcccaccagc cttctttcca 85500
tctcagcagg gcctctggac ttgacgttct ttctgcatgg cacactcttc ccccaggttt 85560
cctggtagtt gaattggtct catcatctat gcctctgctc gagagttaac tccttatgca 85620
ggtcttttct gaccatcatt tctaaaacag gtgattgtat tagtccattt tcatgctgct 85680
gataaagaca tactggagac tgggaaattt acagaagaaa gaggtttaat ggacttacag 85740
ttccacatgg ctggggaggc ctcacaatca tggcagaagg caaggaggag caagtcacat 85800
tttacatgga tggtagcagg caaagagaga gcgcttgtgt aggggaactc cccctttttaa 85860
aatcgtcaga tcttgtgaga cttattcact atcatgagaa cagcatggaa aagacctgcc 85920
cccatgattc gattacctcc ccctgggtcc ctctcacagc acatgggaat tcaagatgag 85980
attttggtga ggacacagcc aaagcgtatc actggcatag agtaggtgct taagtaggta 86040
ctcattgact gagttaatga aaaaaagaat ctggccagtg gtggtgtctc atgcctgtaa 86100
tcccagcact ttgagaggcc aaggcgggca gatcacctga ggtcaggagt ttgagaccag 86160
cctggccaaa atggtgaaat cctctactaa aaaaacaaaa attagccagg tgtggtggaa 86220
ggcaccctgt gatcccagct acctgggagg cggaggttgc agtgagctga gatagcacca 86280
ctggactcca gcctgggctg caagagcgaa actccatctc aaaaaaaaaa aaaaaaaaga 86340
aagaatcaaa attggaggac caggtgtggt gtctcatgcc tgtagtccca gcactttggg 86400

aggccgaggc aggtggatca cctgaggtcg ggagtttgag atcagcctgg ccaacatggt 86460
ggaacctcat ctctactaaa aatacagaaa ttagccaggc gtggtggtgg gtgcctgtaa 86520
tcccagctac tggggaggct gaggcaggag aattgcttga atctcgtaag tggaggttgc 86580
agtgagccaa gatcacacca ctgcactcca gcctgggtga cagagtgaga gtctgtctaa 86640
aaaaaaaaaa aaaaaaattg gtatgagatt aactggcatt aatgaggacc actcctcggc 86700
agcagacctg ttgtatttat gatcaataat gtgagattct tgctttcaaa gggcttccat 86760
tccaaccaaa ggaatgatga cagaaatgtt tttttttctt ttttaaaatt ttttaatttt 86820
aattatatat ttcattttac tcaatatatc caaaatatta tcaccatacg atataaaagc 86880
cttattaatg ggaatgtttt acattctttt ttgtgctaag ttaccaaaat ctggtatata 86940
tttcacatgc atggcataac tcaatttgca ctagctatat ttcaaatgtt caaaagccac 87000
atgtagctaa tgactattat attggacaga tctaaatata gagttttcct gaaacttaaa 87060
gacgtttcat gagactagca cttagtaagt gtggacaaga gaggaatgag atgaagctgg 87120
agtgggacag gcagtgatag atcacacagg gcctggtagg cttgggaagg agtttggatt 87180
ttatactaat ggcattaggt cacctcctac aagaagtctt tcctaatgtc ccaaaaagag 87240
ttaaccactc catctcttgt gccaccatgg cttttgatga aaaacccaat atggcacccc 87300
ggattcttta ttatatcttt tagtatatac atggctgatt tctcctcaag ggcagtgaat 87360
gtgtctttat tcatctcttt attcccaagg cctggcacac ctcttagcat ataataggta 87420
ctatatattt attggaagag tgaatgagtg ggggtgcgag aatggattcc ttcagatcta 87480
ttttccagct cattaattct ccctctagct atgtctcatc tgctatttaa cacatcccctt 87540
gagttttcat tttaacaact atgttttcat ttctaaaata tctgtatggg ttctttttca 87600
aattagcctg gtcaatttag agtttcttct acttatctcg ttttgtgatt ctacatttca 87660
tatctttaaa tatttcatag ttattttata ttccataccg aatagttcca atgtatcaag 87720
tgccttggga tctaaatctg ctggtgattg attttcctga ctctcactca tggtggctta 87780
ttttcttctg tatctgattt tcttcagttg tgagttcaca tttgttcgat cttaacctgt 87840
cctgctttag cagtggtttt caaagtgtgg ttcctggacg agcacaataa acagcacctg 87900
ggaatttttt agaaatgcaa gttctagggc tgggcacggt ggcacatgcc tgtaatccca 87960
gcactttggg aggctgaggt gggtggatca tgaggtcagg agttcgagac cagccggacc 88020
aacatagtga aaccccatct ctactaaaaa cacaaaaatt agccaggcgt agtggcatgt 88080
gcctgtaatc ccagctactc gagaggctga ggcaggagaa tcacttgaac ccggaaggtc 88140

gcggtgagca gagatcgctc tactgcactc cagcctgggc gacacagcga gactccgtct 88200
caaaaaaaaa aaaaaaaaaa tgcaagttct agagccccca tcccagactt gctaaatgag 88260
aaatgctgaa agtgaggccc agtaacctgt atttgacaag ccctatagaa ggttctgaca 88320
cacactggcg tatgaaaacc actgcttgca agataatttg gtttacctct ttaggaagcc 88380
aaggagtgct accgaccagc agccacttta gtttttattt ttaatttttt agtttttttat 88440
tgactatgcc ttataaaagg accagcagcc actttaactt tttggggctg ggcttaaact 88500
agagttgcag gctcagcttt actatgctgc tgctggccta aggctgttta ctgcctgtag 88560
tgctggtatc atttgcagtc agggcaatct tacctttagc gctgtgttct tctccactgc 88620
tttcccctcc tgttccacct caatataatt ttgtgggagg aggaggggag ggttgaagga 88680
actgtcttca aagatttctg taatttacag tgaacccaaa aattacatta aaagtctgta 88740
ttatccagga tcgagctgtt ttaccatggg aaagcccatc agagtaccca accctccata 88800
tggccagaaa gaacaactct gtctgaatac acgagtttca ggggctgctt gtgccttcac 88860
tcattagggt taaaacatgg tcttaaagct gaaggccgcc tctgacctga cagctccaag 88920
tcctgcggac tcctgcgccc agtaatcacc tccatggcga agcactgttc ctgctcccgc 88980
aggcggctat aggtccacag caggctctga aagtgctccc acagctggac acgctgcccc 89040
aggtctgggg gccgcagcct gagggcagag ccagagaggg cgggagagac cacgagaaag 89100
ctggtctctc ccacacccaa caaaaggacc agagtcccag ctcagtgtta gagccaggtg 89160
agcccatgtg acctgcccac acagctggga aagcgggtcg ggtttctggc ccagctctag 89220
ctgtggagtg gggtgggata ggcacggagc cagaaggcag gcagctgagc aaatcacctc 89280
actcttcaat ctctgtcaca caaacacatg tcatataaac ccagctagag agagccaggg 89340
tggtgcttaa gcttctcaca cagaggccac tgaacacaga aaggtctggt ctatcatcag 89400
ggccctacac agggttgcag ccatctcgga tgctggcaag gtctgcactg gccaatgtgg 89460
ttcatgtaac aggcatctac cacctgcagc atttgccact gaaaccatga cctatctggg 89520
ctaaaatggc tcatgaaaca atgtttgtgc atttgagaaa tgcctcgagc atgtacagct 89580
tccgctgcag gtccccctcg ctcttggtgt ggtcgccatt gatggcaatg aacaggcatt 89640
ctccaaacag gtgaaggaca tacagggagt tgctgttttc catggagaag caggtgtagg 89700
tgtccgagag cttctccagc atcgtcatgg aggagatgat gaccggggct aggaggggc 89760
tgagctggtc ctgtagggca gggagctctt cttcctcatt ctctgactgc ccgaacttca 89820
gctggagact ctcttcaaac tcctcatccg tccagtagaa gagggcctct gtgccctcaa 89880
tggccaccaa gatgcacttc atcttggtaa ggagcacagt ggagcgtcca gacagccaga 89940

ggttcagaaa gggctgcagc agacagactc tgtgactgcc tcatcggaga gcagcacaac 90000
atccctggtc ctgcaaatgc ggatcgcggc gtgcacagca ccccgcctgc gggacagaaa 90060
tgttttctga actgaaaaag ggggactaca ggtgcctgcc aggccctcca tatacataca 90120
tccccctatg tctgtgtcta gaagtgagat acaccgttat ttctgttttc tgattggcct 90180
ttttagtttt ttgagacaga gtctccctct cttacccagg ctggagtgca gtggctcgat 90240
cttggctcac tgcaacctct gcctccgggg ttcaggcaat tctcctgcct caggctccgg 90300
agtagctgga attacaggcc tgcaccacca cgcctggcta atttttgtat ttttggtaga 90360
gacggggttt ggccatgttg gctaggctgt tctcgaactc ctaaactcat gttatccacc 90420
ccccctcggc ctcccaaagt gctgggatta caggtgtgag ccaccgcaac tggcccattg 90480
gcctttcttg ttgtactgtt ctgtcccttc caggtaagac aggtacattt tctagtagta 90540
agctcctgtg tcttaaaaaa gaaaataaca ttcattgagt gcttacttta tgccaggcac 90600
tgtgctatgg gctttatata aataatttcc tctctgaaaa aaacaaagac aacaaaaaaa 90660
attacttctt tgattctttt ctaaaagttc cttgaaattg ccatggaccc tcccattcgt 90720
gcaggtgggg agaaagaagc tcagagtcgt tgagtacttg gcccagtgag taaatggtgg 90780
agccaggatt tgtgaacagt tttgtggact cagaagcttc catcccttac aggggtggtg 90840
aagaaggcct ttccgagagg cccgagaggc cccaaggcag aaccatccag ccaagcccac 90900
cccaaattcc tgtcccacag aaaccaagag agataataaa aagacggttg cagggttgtc 90960
tcgcccctcc tctgtctctt gcctgctctc tctaaggaat tcagagcctt cccatcttga 91020
ataccagcgg cagctccaga atttccccgt gggacaggct tactgagagc cgtcttgtga 91080
agggggtagc cctggacttg cctgggagct gtgtctgtgt agcaggtact ctgctttcag 91140
gaggatgcag gttttgttgg gggagagtgt tccagggact gtgaggggac tgagcctgct 91200
cctgaagcca tctccttttt atttaatttt attttttga gacagagtct cgctgtgttg 91260
cctaggctgg agtgcagtgg caagatcttg gctcactgca acctccatct cccggttcaa 91320
atgattctcc tgcctcagcc tcccgagtag ctgggattac aggtgcccgc caccatgcct 91380
ggcaaattgt tgtattttta gtagagatga ggtttcacca tgttggtcag gctggtcttg 91440
aactcctgac ctcaggtgat ccacctgact tggccttcga aagtgctggg attacaggca 91500
tgagccactg cgcccgaagc catctcttgg taaaatactg ctgagcattc agacagaaca 91560
gaattaggag aaagagaagg aaccagcatt gatttcttca acacactgtg ctaggtacct 91620
caggcatttc gattattcta ggctgtgagt gaagagttgt tgccagaatc taaagtgtgt 91680

tctgagaact tggccaaatg tagggtgacc atatgactta ccattcaaat ttgggacact 91740
ttgggggtga cgaagggatt actatcaata attatgccct gggattgtct cacttaaact 91800
gggaggtatg gtcaccctag gcagaaggga agtaaaatgg tcctctgtta ctgattatct 91860
gttgctgtgt aaccaatcac accaaaattt agtggtttaa aacaacaaca gtctttttat 91920
tatatctctt agtttctgtg ggtcaggaat tgggagaggg cttggctggg tggttctgac 91980
ctggggtctc tcatgcatta tagtttggtg tgggtggagc ttctgttttt ctctctctcc 92040
atttagcctc agggtcattc tgtagtgagt ccatgtgggg agttcagagc aagtattctg 92100
gcgaacaagc tggaagccat gctgccttct gtgatctagc ctccgaagtt atacagcatc 92160
tctcccatcc ccgtaacttg ttggttccaa gtgagtcaca agcctgccta gagtcaaggg 92220
cgagggagga cagagactga atttcttgct gggtaaggca caaagttatg gaacaagtat 92280
gtggagtggg aggtattgtc gtggccatct taggggtatg aactctgcca tggatgcaga 92340
ctggcctttt ctaagagtca tcagtttggt tatctgcaaa catgactgaa gagtgtgggg 92400
tacatcaatg ccaggcaaag tttctgaagg agtctggctc agagggggag gcctggaata 92460
cgatcctagt ttaccaaggg gaacctggtc agttaccttg caactttgga gaaagagtga 92520
atggaagtgt ccctcagtag gggacattta ggaaggggat ggtcacagag ccagggctgg 92580
cattgtccag ggcacaggtt cttggttgcg ctggctcaag catcatcccc attccccggg 92640
taagactgtc ctcccaaaac agaggtggct tcaagctgct ctgtgataaa cacttttttt 92700
tttttttttt tttgagatgg agtctggctg tgtcacccag gctggagtgc agtggtgcaa 92760
tcttggctca ctgcaacctc tgcctcccag gttcaagtga ttcttatgcc tcagcctccc 92820
tagtagctgg gattacaggt gcctgccacc atgcctggct aatttttgta tttttagtag 92880
agatggggtt tcaccacgtt ggtcaggctg gtctcgaatt cctgacctca tgatccgccc 92940
gcctcggcct cccaaagtgc tgggattaca ggcgtgagcc accgtgcctg gccgataaat 93000
gcttcttaat gctgttgttt attctgactc cctgccacca agcagtgctg tgacaccgtg 93060
gatcctcatg gaacttgtgc tgtagggaag cacgtgctgg ttaggctgat ggaagtgctc 93120
cattctgctg gtggggtatt tactgtgctc tccaataata aatggatctt ctgctatgcg 93180
tcagccttgt aagtttggtc aaagggagtc tgccaccgcc ttgtgtgcag aaagatcccg 93240
gatatcctgt ggtggattca cctcattggg accggtcagt gtggccaacc tctcttccag 93300
agtggcaact tgcgtttcct tgcttatctt ttaagaagca ccataggaat catcacccca 93360
ttttatagac gagaacactg aggctcagag aggaggaatg tcttgcccca ggtgagccag 93420
ctggtcaggg tgcatttgga atggaaaccc aggtgtggct gaaaccaaag ctggcactct 93480

ccatgcacaa ttccaaaacc cacaaagctc tgaaaatcta aagcttttc atgagattgg 93540
ggcaagcatt tgatggcaaa cctgatatga attggatgtg aggttattta tagtctttat 93600
tttgtcccac ttagcgtgaa tatttataca ttttgctgca gaaaaattaa agggtttatg 93660
gaatattgct ccagagctca ctggcatgtc acctgatatg cggtagatcc actcgaaaac 93720
ctttcaggaa tccaaagaat tccaagttat aaagcacatt gaggccggat gtggtggctt 93780
cagacctgta atcccagcac tttgggagcc caaggcgggc agctcaccag aagtcagtag 93840
tttgagacca gcctgggtga aacctcatct ctactaaaat acaaaaatta gccaggcgtg 93900
gtggtgggtc cctgtaatcc cagctactgg gggaggctga ggcatgagaa tcgcttgaac 93960
ccaggaggtg gaggttacag tgagccaaaa tcgggccact gcactccagc ctggccgaca 94020
gagtgaaact gtgtctcaaa ataaataaaa tataaaataa aatacataaa ttgataaagc 94080
acattgagcc gcgaggattt cagataagaa attgtggagc tgtgctacct gtaccaaact 94140
tttctgtctc ggttaggcag agatcactac ccccattctg cagatgagga agactgaggg 94200
caaggaacat ggtgtcccag gtaggacggc agccatttta tcatcctgtt ggaggctgtg 94260
ccagcaggaa aggaagcttt ggagccacca gcccacccca gcctcccaag aaccttgttg 94320
tctcagcaaa atttcagaac tagaaaacct ggaaagatta aagccccaaa gaatgccaca 94380
agtcccccag gaagaaaggg aggctttgct gtgcgttcca gtggtcgaca ttctaaatca 94440
ttttttattt cagctgcatg tacactcacc catcacagga ccagttctca gaatagagag 94500
gtacctgttg aatcatccac cctacttcct gcctcgtgtg ggcatgtctc caagtgctga 94560
gccatccgct tcgctgccgt ggcctgagat atatcaggat ttgcaggcct ggcgacagga 94620
gacaaaatag attcccattt ccttcagaac catttagcta gtttagagag tgtttgactg 94680
tttcaatggg atgagcaata accaggcctc tccttggctc cttctctctg ccccatatgt 94740
tttcttctgt tggaagctgg gatttggggt cttagggcca aagataaata ctgattttgg 94800
ctcgatctgg ccgcacagct gtgggctagt aggtgcccct ctctgaacct caggccccca 94860
ctttctgcag cacagtgttg ttctcatctc tgtttttttt tttttttttt ttttttgaga 94920
tggagtctct ctctgttgcc taggctggag tgcagtggtg cgatttcagc tcaccgcaac 94980
ctccatctcc tgggttcaag caattctccc cacctcagcc tcccgagtag ctgggattgc 95040
aggtgcctgc caccaggccc agcggatttt tgtgtttttt agtagagaca gagtttcacc 95100
atgttggcca ggctggtctc gaactcctga cctcaggtga tccgccctcc tcagcctccc 95160
aaaatgctga gatgacaggc atgagccacc gcatccggtc tctcatctct tcataccaca 95220

tgccttggtt cccactgccc cggcgggtgc ctggagagcc ttgtggctgg ggctgagtga 95280
ccgcaaggtg atatttaagg tggtctcatg gagcagtctg acatcactgt aatgcaagca 95340
gacatctggg gagtcagact gactgaattt gaattccagc gatttaaatt tttaccactg 95400
ttgtgtgacc ttgggcaagt tgtgtgacca tttgagccat agcttcttca tctgtaaaat 95460
agatggaatc atagcatgta ccacttcggg agggagggag aatagaatta ggtcagattt 95520
tatatgtgac atgcttaagg cagtgcctgg catgcaaata agcccttgat acatgccagt 95580
ggggttactc tggttaccag aaacttggaa gtaggggctt tggctggggc aagatctcgc 95640
aacatttaaa aagcaatcac tgaccgggca ccgtggctca tgtctgtaat cccagcactt 95700
tgggaggccg aggcaggtgg atcacgaggt cagaagatcg agaccatcct ggctaacacg 95760
gtgaaacctc gtctctacta aaaatacaaa aaattagccg ggtgtggtgg tgggcgcctg 95820
tagtcccagc tactcgggag gctgaggcag gagaatggca tgaacccggg aggcgaagct 95880
tgcaatgagc caagatcatg ccactgcact ccagcctggg tgacagagag agactccgtc 95940
tcaaaaaaaa aaaaaataaa taaataaaaa gcaatcactg gtcactcgtg aggaaccagg 96000
ccccgagttg gtcactcagc gttcaggtgg agaccttgcc atgctatcaa gtaacctaga 96060
gtctattttt ttttttaaga tggagtttca ctctgtcgcc caggctggag tgcaatggca 96120
cgatcttggc tcactgcaac ctctgcctcc catgttcaaa cgattctcct gcctcagcct 96180
cccgaatagc tgggattaca ggcacccgcc accacacccg ggtaatttct gagtagagac 96240
tgggtttcac catgttggcc aggctggtct tgaactcctg agctcaagtg atccacccgc 96300
cttggcctcc caaagtgctg ggattacagg tgtgagccac tgtgcccagt caagtaactc 96360
agagtctaat ggggaaagta gatgtggcta atccaggggc tgcaatacct ataaagtcct 96420
taatcaaata tattttgcgt ctatgtttaa aaagcagatt tcacctaaaa atctagtttt 96480
ttggcttctc ttaagatctg gcaacaccgg gctggccttc ctgcgatacg agaagaagct 96540
ggagctgaat aggagttgcc cccttggcca ggggctctct actttgcctc agtccccact 96600
actccctatt gcaccagatt caaacttctt catagtcatg catgtttgcc gctggggcct 96660
gtgggagttt gctgataagt tgcagtgcaa tgctgtgggt gctgtgagag cacgatgagc 96720
aataataact cagccttggg cagtcaggaa aagcttccca agggaggcga agtcacagct 96780
gcttctctat aaaacctgca gatgctgctg aacaccctca tctttatggc tcaaggacat 96840
gaataaagga cgcaaagtca gagctcacga ggaatctctg gcataaagcg actgaggccc 96900
agtgacttat ctcgggtcac acagcctgct gatggcagaa gtggggctag aactaggatt 96960
accaaccaga aaccttttg gactactttc cctagaacca gagctgtcaa ccagaaacag 97020

ttctgggcca ctctacctcc cctgtctctg gattcctcgg gagttaggag gatttgtact 97080
ctggaatctt agacttgagt cctgtctctg ccatttactt gcagtatgac ctcagatgag 97140
tcacttcctt tccttgaacc tcagtttcct catctgtaag gtagagctaa ggattctgac 97200
ctcaaaggag tgttctgagg gccaaacgtt gggaaagtgg acaggaggca atctcagaca 97260
tctcattagc tcaagaggac tctagatacc tgagggtcat tatgactgtt gacaagtagc 97320
caccttctcc caagagattt tgttaccatc tgtttaacag tgaccttgaa ggggatccat 97380
cccccacttt gcccttgcca gtcccttaaa ggagcacgca tggcctttgg tcaggcttgg 97440
accctggaag ggaatgcttt gggattctct gactttgggt gtgaactggg ccctggatgc 97500
agagcccaag ggttcccctc tcctgggagg ctccaaggtc acagcgagta ctagggtaga 97560
gttgggaagg aagcagaatt tcctgggcaa aagaaatgtc aataattctt ttgttttctt 97620
caaggcatct acctgcctat ctggggctcc ccttaaatcc catgtctgtg gctggaacta 97680
ttgagactct cctactttga ggaggtccca ctgtcctgag ttcaaatcct gacttttctc 97740
cttattagtt gagtgtgact ttggttggac aagatttcaa attcctctaa actccaatgt 97800
cctcatctac aaaatgggcc tcttaagagt acacatttgg taaggtttag tgggaattaa 97860
gtgagattat gtgtgaaagg gtttagcaca gtgtagagct cagtcaatgc ccgttattac 97920
tgtgattgga aattagaatg attgccaccc atcgtgtttg tataacactt gaccatttct 97980
gaacttatgc ttctcttacg ccatttgatc ttcgcaatga ctctttgagg tggccggtgc 98040
agggatcatg acctcattgc acagatgaga caactggagc tcagagaagg caaccgtcta 98100
ctcaaggtca cacagcttga gtatggcaga gtggcagagc caagttcact tcttgttctt 98160
ttttttaag atggagtccg gctctgttgc ccaggctaga gtgtagtggc atggtcttgg 98220
ctcactgcaa cctccgcctc ccgggttcaa gcgatttcct gctaattttt gtatttttag 98280
tagagaaggg gtttcaccat gttggctagg ctggtcttga acccctcacc tcaagtgatc 98340
caccccgcctc ggcctctcaa agtgctagga ttacaggcgt gagccaccac acctgatctc 98400
aagtcttctg agatgaagat taaacagcac cttccacagg gtcagaccgg acgagacaag 98460
accaggcttt gaccacgtgg ttgggttgtt ccctgggtgc ttcatatctc ccaaaaactc 98520
cttgatagaa ataatccaca atgctgtttc aaaccctttt tgcctctgtt tatgctctga 98580
gcctgtacca cctctagggg cgaagaaact tctcctttct ccgtggcgtc aaacggactt 98640
ttccttgtat ttgtcctaaa gggacctcag cagcccctcc ccgttgggtc cgtcaaagca 98700
ctctgccaga aggtctgtgt gttcttcagt gtgggcacat gatggcgctg ctccacaacg 98760

catgaaaaat caggcccaac ccacccctca cccccgccc cccggactgc atttcaacgc 98820
atcaaagatc aattaaacac ctactatgtg caagtgactg tgattgctcc ggggagggct 98880
tcagttattc aatactgtta tgtttagcta tattaataat agccgtaata acatcggtac 98940
agggcttcat agtttatcga gcaatttacg tggattatct ggttctatct gccaagcagt 99000
cctgatgcgt tagatcgggt gggtctttct gtcccacttg aggaggaaac tgaggcacgg 99060
agggtgacag aacttatgta aaggcacggg ggagagaggc acatggtagg catttgatga 99120
attataggtg gtggatggaa tgaggcagac ccaggcatct atctcctcca ggttgttatt 99180
catcagtgag ggccgggatt gtatcttatt tgtctttcca tccccactcc tagcacggct 99240
tctgattgag ggcttccaca gacctctgtg gcagggagag gagaggcagg gggattccct 99300
gtaggctgca atgccgaaca gctcctggaa ggctctctga gggtgtgcag gctgagagag 99360
gtggcttctg ggctggagac tgcaaagaga ggaggtcact gccttcaccg tgtagcattt 99420
gcaggacatg aatgactcac cgtaattcag ctcctgaagg caccaagtag ctgagtggtc 99480
aggatgattc attcattcat tcaacaaacg ttttctgagt gcctgttaca tgctaagcat 99540
taagaatgca ggtatgcaaa cacagcctct gtccccctgg agcttccaga gcagtggagg 99600
agatggaggg caaagagcta gcaatgcggt ttggtttgag ttgcccagaa gtctgtactg 99660
agtgccacgg ggtaaccaag tctagtggca cagtgtgaag gctacaagag ggggagatgt 99720
tttgcaggat ttgaaggatg aaatgaattt gcagataacc agacaaagaa aggtgcatga 99780
ggactggggg aaggaaagca tcaggggcag tggggtatgt acgggcagga gctgtcaaag 99840
ggcgtcagtc atgtgtttga ggatgggtaa cagatgcagt aggaaagaca gtggtaccag 99900
cagggagggc cttgaaagct attctgagga ctgtgaattg catcttgtat ttgtcaggga 99960
atcaccatgc tgggagctct gctaggagct cagagttcca tggagaaggt gggcaaagag 100020
aggcccatca ctcatgttta ctgagccttg actatttcgt ggtgctaagc acttcttggg 100080
ccttggttta ttgtctgtct tataaggcag gtactgtgat catccccatt ttatacacga 100140
gtaaactgag acttgggata ctgacataag tttttcccaa ggtcataaaa ctggtactag 100200
tggagtcagg acttgtcttt tttgtttttt aatggtcacc tttactaaag ctgaagtgta 100260
tgggtttttc acggatgggg tacaaaattc aaaaggctca aaaagtccca agtgaggttg 100320
ctcttctttt tttttttttt tgggatggat tctcgctctg ttgcccaggc tggagtgtag 100380
tgggatgatc ttggctcact gcaacctctg cctcctgggt tcaagcgatt ctcctgtctc 100440
agcctcctga gtagctggga ctacaggcac atgccaccac gtctggctaa ttttttgta 100500
ttttttagca gagacagggt ttcaccatgt tggtcaggct ggtcttgaac tcctgacctc 100560

gtgatctgcc caccttggcc tccctccctc cccagaggtg actactctta cactttcttg 100620
tgttttttat tttctagaga ctttgcctgt ttgttttgtg agaggtgttt tatatagaca 100680
taagcacaaa aagcaagaca agacaagtgc ctgttaacta caaacatggg ctttgggaag 100740
agccagtgtg ggtttagatc ttgacttttt ctgagagcct gacaagtgtc accattaaat 100800
gctggtttgg acaaagggtg ggcgggcttg gagggtggga tgaggatggc agggggtagg 100860
gacgtggaca tcaagaggtc tgtgtgcaca agtgtgactg tgtgggcctg gactgggggt 100920
gaggtgatca gatggggaca ggaaatgggg actgcagagg cctggtgaga gacagagcag 100980
ggacgaggca ggggagagcg gctgctgcgg ggctgtcata gccggcaggc gtttggcagg 101040
gcagaaggca cagtaagagg aagagaggca gcctgcgggc ttggcttggg acagcctctc 101100
taaggctcgt gctgactctc gagcagttcc agctcagcag gccatgcaca cgaaccagga 101160
agctgggtgg actgggctgg gaaggaggcc atgggctcag gagcccggga gatctggtcc 101220
cagtgcccag tggggattct gggcaagcca attcctctcc aggcatctgt gcgggtcagc 101280
gccacacgga agcccctcgt ccctgttgat cttcactgta gagggagagg cagggaaagg 101340
cttgggagat gccgggctgg gatgggctag gggcttggaa tgcctgccca gaggttttca 101400
gggcggcatc tcagcaagtg tccacagtgt gcagagctct cccaggcagg atgggcacct 101460
atacatgcat gcatatgtgt actttacatg ttatatgtaa tacaatgtaa tacatgttat 101520
tttgctcggt tcccacttcc ccttttagaa gccagttgat atataatgag ttggtgtcct 101580
cccattcttt ttgatgcatt gaggatccta agtctgtgcc ccagtcccca tagtctgttc 101640
acttcctggc ttcctggaag aacaaaatgt ccccgcctcc tctcgttctt tccctgcccc 101700
actcctagaa tcagctgttt ttctaaggag cccaggtttt cttccctgag aaatgctatt 101760
tgggtggggg agagggaggg aagcaacaag ctgtggggga agagcctcga tctgggcaac 101820
ccctttgctc ttgtgacctc gagcaagtcc ctcggggcat taggggacca gttatgtcct 101880
ttctagactc acctgaggcc aagaagatgt gggaaacatc catcctgtgt gcctgcggtc 101940
tggaaaggca cagccccagc tctgcccctg tgtggctgtg tgattctggg tttcttaacc 102000
tctctgagcc tcagagtccc catctgtgag ataggaataa catgaggctt tttttttttt 102060
tttttttttt ttttaagaca gggtcttact ctcttgccca ggctgaagtg caatgacatg 102120
atcatagctc attgcaacct tgaactcctg ggttcaagtg atcctcccga ctcagcctct 102180
caaagtgcta ggattacagg catgagccac tgcatctggc acgtggacat ttctgactta 102240
tctcaactag ggaaggtact caataaatgc taattccctt cttcctcccc ttaattattt 102300

gacttcagta ccccaggaaa tgaggactgg gatattggat ggtttgggag aggaggaaag 102360
aggtgtccag ggaaaaggaa gaaattggga aatagaagac cacggacaaa taaaagagga 102420
ggggttaatt cagaataggg aagacgggcc aggcgcaggg gctcacacct gtaatcccag 102480
cactttggga agccgagaca ggcggatcac gaggtcagga gttcgagacc agccttgcca 102540
atatggtgaa accccgtctc tactaaaaat acaaaaatta cctgggcgtg gtggcactca 102600
actgtagtcc cagctgctca ggaggctgag gcagaagaat cgcttgaacc tgggaggcgg 102660
aggttgcagt gagctgagat cgtgtcactg cactccagcc tgggcaacag agcaagactc 102720
catctcaaaa ataaaaaaaa agaaaagaaa agaatagaga agatgatttt aatcatcaga 102780
gctttccaat aaaggcaggc tctggctgct tgggggaggt tgagagcctc ctgtcattag 102840
aggtatgcaa gtagaggctg agggattgtg agccacacag atgtgtttgt gaggactcgc 102900
aatggccagg aggtagattc cttcactcag caaactttgg gagagggctg tccttgcctg 102960
gtcctgtaat ggggcaggga agccaaggtg aataggacac catccctggc cccagggagc 103020
gcccagccca ggaaataagc aaatcgctga gatcctttta ctctgcagtt ctgtgctttg 103080
aagcatccaa gccttggagg gagttggctg gggattttca gtgtgcgcct tttggtattg 103140
atccactgaa gttggagctg gctggggaat ggcaggagga cgccgcagtg ttattagtgc 103200
ggaggacacg ctgtaatctg tcagtgtcac cccggttgca gctggccagg aaccatcctg 103260
ctgttaacgc ctcccttccc agcagccatg gagcacacaa cttgtacagc acctgccagt 103320
gcctccacct ctccttgtag gagggagagt gtggatattt attctttttc tgcatctccc 103380
tagcatgagt cctcgtctcc aatcacacta atttattcag tgttttccaa cacaccttgg 103440
gcattcctac ctctgtacct tcagttacca gaattcccta ccagcggtgg tcactcctgt 103500
ccattcatcc atccacctgt ccatccatcc aatcatccat ccatccaccc acctatccat 103560
tcaatcatcc atccattcat ccgtcatcca tccatccccc cattcatcca ttcaatcatc 103620
catccatcca ttcatccatc cacccaccca ccttccatcc attcaacttt gcaatccgct 103680
tcagttcaat tcaattcaat tcacctttat tcaactcata aggttactgg gctttgccat 103740
gtaccacaca catgtgataa gtgaggcatg cctctgccct caaggagccc atgggaagaa 103800
tcctccccat tctccatggc cagctttgca tctcacctct gttaatcctt tgccatgccc 103860
ttcagcagaa gcaacggact ctgaagggct gtcctgtgag gagagttcag ttctggcttt 103920
catgaattgc agaggacaga gctcagacaa ggagagaggc aaagggtggg gaggaggtga 103980
gagtgagatg agctagtggg acggggattt tggctttgtg gagggagctg cttccagtta 104040
gctgtgagta ctcagcagtg tattggggga tgaagggaaa gagaaggggg caaggaaacc 104100

actattggag aagtgggtta gtgtggcggt gaggaggtga gctctgcagc caatggacta 104160
cctggcttat tgtctcagct ccaccatatt cctgctgtgt gaacctgggc acatatctta 104220
acatctctga gcctccatgt cctcatttgt aaaatgagga taataagacc tatctcacaa 104280
tgttgccttt agcattaaca catgcagtgc ttaaattaat gcgtggcaca aagggagagc 104340
ttaatagatt ccagctttgg ttgtgactac tcctattacg taccagctac tatgccagga 104400
gctttcattc cagtgtgtcc tctgagctaa ccctatgcgg ggattattga acccattttg 104460
cagatgagga aatgaagacc gacggaagct atctcttgag ctcgtcatgc agctggcgaa 104520
gggtggagca gggcttcaaa tgcagacctt tccaactcca ttgtccctgc tctcctgcgt 104580
gcccttttcct gccttttctc aaggggtgag tgctctgaga tgcaaagatt ggaagacttc 104640
catcccagct tctgcctagg gcactctttt ggccttctct agttgtagcc ctgaattgtt 104700
aattactgtt tcatgtatgt tttctctgct ccccagagac catgagatca agaaaaaaga 104760
ttttcttctc cacggcaact gaagtgttga ctttgacagt gaaagctaca gagtgtatga 104820
tgtttccctt tttgccttgc ttgccaggaa gcttgtgctt tttgtcaaac tgcttacttc 104880
ccctttccat ggttttggtc ttctaccttt gacagacttt tattcataag tcttactgta 104940
agctgttcta ctcatagaat aagctgaata aatagaaatt gaattgaatg gaaaaggatg 105000
ggttacaaat tacaagtaaa taattcattt tatatttaat ttaatttatt tatttacttt 105060
tgagatggaa tactgctgtc acccaggctg gagtgcaatg tcgtgatctc actgcaacct 105120
gcgcctcctg agtttaagtg attctcccgc ctcagcctcc caagtagctg ggattacagg 105180
tgcccatgcc tggctaattt ttgtattttt agtagagatg gggtttcacc atgttggcca 105240
ggctggtctc gaactcctga cctcaggtga tccatccgcc ttggcctccc gagtgctggg 105300
attacagatg tgagccactg tgcccggcct gcaagtaaat aattcaaata aaatcacgag 105360
cttcaggaaa gaaaaatgcc tttcttatat cgggccattg ccacagtgtt tagccctgag 105420
ccctggttct ggctgggtga agtttgcatg gaaagcccag tggtgatttt ccctgttgtg 105480
tctggatcag tggctctcct tgcacctaga atataactca aaggccttcc ctttggatta 105540
gagcagcagt ccccgacctt tttggcacca gggatcagtt tcatggaaga caatttttcc 105600
acatactggg tgggaaactg tttctcctca catcatcagg cattagttag agtctcataa 105660
ggaacaggca acctagatct ctctcatgca cagttcacag taggactcat cctcctgtga 105720
gtatctaatg ctgccgctga tgtgacagga ggtggagctc aggtggtaat tctccatcac 105780
ccgctgctca cctcctgctg tgtggccctg gtccaaggcc cagggattgg ggaccccggg 105840

attagaggac tgacccctgc ccacctcttc caccttatcc tgtgtaactt gtccccttgc 105900
tcacccagga taactactgg agtcatcttt gagatgttct cacaagccag gttctttccc 105960
tgcttcagaa aagaggcttt gtggctgggc gtggtggctc acacctgtaa tcccagcact 106020
ttgggaggcc gaggcaggcg aaccacctga ggtcaggagt tcgagaccag cctgaccaac 106080
atagagaaac ccggtcttta ctaaaaatac aaaattagct gggagtagtg gcacaagcct 106140
gtaataccag ctactcgggg aggctgaggc aggagaatca cttgaacccg ggaggcagag 106200
gtggtggtga gctgagatca tgccattgct ctccagcctg ggcaacaaga gcaaaaacta 106260
cgtctcaaaa aaaaaaaaaa aaaagaaaaa gaggctttgc atgtgccgtt ccctctgcct 106320
ggagccctct gctctctccc atcccctgct tctgcctggc tcatcattcc tacgcttcaa 106380
atttctgctg aaagtcagca tcttagggag gcctcccctg actgctctgt ttaaaggggt 106440
tgtggtagct ggtctgcaaa gacaactccc agtgcttcct ggcctctcct gtgtatgctg 106500
ctgttcccat caagaaacag actctatttc tcctcctcct ggaagtgggc cgggcgttgg 106560
gcctggcttt ggccaatgga atgtggcaga ggtaatttac tgaggcttcc gaggtgaggc 106620
cttcagatga ctggcagctt ctccttcctg ccacctggaa cccagctggt atgctgtggg 106680
aagcccatat cacatagaga gacacagcgg gagaaatggg gtgttcagct caacagccca 106740
gttgaacccc cagccaacag tcagcatgga ttccagccat gtgcgtgagc cagcctgggt 106800
gctgcagccc aggtgagccc ctgaatgact gcaggcccag ctaacatcat acggaacaga 106860
agaaccaccc aactgagccc acagaactgt gggagataat aaaatggtat tgctgtttta 106920
agccactgaa tttccagtca tctaaagaga ggttaatccc tgataaattt ctctctttct 106980
ctctctctct cttttttttt ttttttagag agacaagttc tcactacgtt gcccagactg 107040
gagtgcagtg actgttcaca agtgcaatca tagtgcactg cagcctcgaa ctcctagtct 107100
caagcatccc tcctgcctca gcctcctggg tagctgatat tctaaaaatc attgccccaa 107160
tgcacttact tcatagcatt cacaataatc tataattata taattatttg attcttaact 107220
tgctaatttt cccttttttc tttttctttt tcttttcttt tctttttttt tttttttgag 107280
acagtctcgc tctgttgccc aggctggagt gcagtggcat ggtcttggct cactgcaatc 107340
tccacctctt gcattcaagc aattttcctg cctcagcctc ccgagtagct gggattacag 107400
gcatgcgcca tcatgcccgg ctaatttttt gtatttttag tagagatggg gtttcaccac 107460
gttggccagg ctggtttcaa actcctgact tcatgataca tctgcctcag cctcccaaag 107520
tactggaatt acaggcgtga gccaccgcac ctggccaatt ttccctttct tcctatagca 107580
catgagttac agaaggctgg gaccatgttt gtcttgattg cagctatccc cagcattaag 107640

cacagtgaat ggcatgtggt gggagctgaa agaatgaaag aatgaatgaa tgaatgaatg 107700
aatgaatgca aggcatcgga gtggtcttga agtgttccta agagccagtg taagtctctg 107760
tggctgcagc ccaggctgat atagcaccag aaaggagatg ggtatggcct aagtctcagt 107820
tctctggggc tttcacgact cagaactgta caacactccc tgacaccacc tctataaccc 107880
agatctccac acccctgcca ggaagaatca cccttttcct tctccttgcc cttctgtatc 107940
ctgcacagct ctccattagg ggacccgaca ggtctccgcg catgctcgtg tgtatagatg 108000
atggaagcag gacagaataa tgggtatgaa tgagggctct ggatccagag acccccacct 108060
ttgaacccca gtccaccaca ttctaaggat atcttggtgc catggctaca gatattgagt 108120
gttcactcac ataggaagtg ctgtgtaagt gtgagcttac attacaattg ccatgtgcca 108180
ggcactactc tcacgtcttg aattcattta cttcatacaa ccttataagg tggttgctat 108240
tatcattccc ctcttacaga tgaggcaact gacgtgtgga taatttgccc aaagttgcgg 108300
atctgaaccc tgccaatgtg gctacagagc ccaccttctt cttttttttt tttgagacgg 108360
ggtctctctc tgttgcccag gttggagcgc agtgatgcaa tcatggctca ctgcagcctt 108420
gaactcctgg gctcaagtga ctcttccatc tcatcctccc aagtagctag gactgaaggc 108480
gtgcaccacc atgcccagct aatttttgta ttttttgtag agacagggtt tcaccatgtt 108540
gcccagcctg gtctcaaact cctgagctgg cgtgatccac ccagcttggc ctcctaaagt 108600
tctgggacta cagccgtgag ccaccgtgcc tggtccagag cccaccttct taaccctcat 108660
actgcctctc tcgttctcaa ggtagaaccc tcgttctgcc tccctgagcc tcagttttca 108720
tacctataaa tgggataata atgcctgttt aatagggcta tgataccatg atctggcagt 108780
gcctgacaca ttgtagaatc tcaataaatc ccaatttgct gtggcaagat agatgaacag 108840
acttccaaac caaggagggc tttgaagctt tactgtgagg gtgctagaga accactgaaa 108900
gttttcgagt aagacaatga catagtgaag ctgtggctta gctccagtcc taccttttcc 108960
cgcctctgtc cccccaacaa ttagctctat gctgcctgag gttggtatct gagtttcaca 109020
tccctgtctt acctccccgt gaggtgctga gatttgaact gtttcaggat cgtgatagtt 109080
catcccgggc ctggaatgaa tggggtggga gggatgttct tgatcttgtg ggactcatct 109140
caaagggctg cctcagagat cccatctggg gccccatttc tgtctccacc tccagcccta 109200
ctgactgaca gaggtgcctg ggtttcatat gactgacttc gtattcccct tggaatccct 109260
tctgcagcat agtggatgag gtgagacaga ggctggtaac tcggtggaag agagaggagg 109320
gagaaaaaac aagggagcca gaacaggaga gagtgggaga caggggacag gagagagaga 109380

gtggtggaga gagggcgagc cagagtgagg gaaagatggg ctcactgctt cagggcgggg 109440
tgcacctggt gacagaaatg ggccacctga ccttgtgctg tgttcccttg ttctgacaga 109500
tatggtgagg ccatctgacc ttgtgctgtg ttcccttgtt ctgatggatg ttgtgagtct 109560
gtgtgggtgc acaagcatgc acatgtggtc tgtgtgtcca catagatgcg agcgtctgtg 109620
acatagcatg caccctgtct gctggcctgt gcatggaagt gcacagatgg gtctccaagg 109680
acctagggac taagcatgtg gagaaccatg tgcagtgcct atgtacgtcc tcagccccag 109740
cgtcacctcc tccatgtgcc tcacccccta ttcgttcacc ctcctccccc tgtggtggca 109800
ttatcacctt tcttggtcag tctctgctta cctgtccctg tctctgcctc tattgagagc 109860
ttcctgcagg aaagtccaca tccttgtcat ccctgtactc ttggcagcaa gatcaaggct 109920
tgctggggca ggtgatcaat aaaggctgat gactgattga gtatatttgt gtgaatggat 109980
ctacttccag aagcgtgtgt gggtgtgtat gtgtgtgtgt gcacgcacat gtgcacacat 110040
ggaaacatgt atgtggccat acacaaatgc acatgcactg tggggtgtgg atgtgtctct 110100
gagatgtcca tgaatgagcc tctgggcaca caccatgccc acagattgat gcagtgatat 110160
gctggcaaat gtttaacaac cggctcttca ttgaaaaaaa gaatgctgtt gggccgggcg 110220
aagtggctca ccctgtaatc ccagcacttt gggagtctaa ggtgggcgga tcatgaggtc 110280
aagagatcga gaccatcctg gccaacatgg tgaaacccca tctctactaa aaatacaaaa 110340
attagctggg tgtggtggcg cacacctgtg gtcccagcta cttgggaggc tgaggcggga 110400
gaatcacttg aacctgggag gcggaggtag cagtgagcca agatctcatc actgcactcc 110460
agcttggtga cagagtgaga ctctgtctca aaaaaaaaaa aaaaagaaaa gaaaagaaaa 110520
ggaaaaataa gccctgatta gcagcatttg cccattgctg tagtgtaaat gttcccacca 110580
tggccgactt caagttgctg ctgtggcgtc atggaatatg gagttagctg ggaagagatg 110640
cacataactg gctcacatga gcccacagga gttggcttca gtacacggaa gtattcatgt 110700
ctgtgactgc ccagcccatg atgggcaggg gaggcagtgc aaagttcccc tggtgatggt 110760
aatgcttctt tccagagctg tgccctgggg gagcaggcag ttgctggctg ccagccagct 110820
ttcaccaagc ggccttagaa gtcagtctaa accaatactc cttgttaggc aggtctaggc 110880
gctcaccaac acagcagcac cttccctcac tccctgcaga ggctttgaag tttttggatt 110940
tggtgaagtc agcatgactg caaggaggaa ttgctaagcc tgaagcatga atggaagagg 111000
gggaaggagg aacgcttcaa acctccatct gaggcaggtg gccagggatg ctggaaggtc 111060
tggaggccct gggccttgtg cctgcttgaa gccgattcac tgtgtaagcc tggacacatc 111120
gcttgccctt gctggcctcc acctgtgact tccgtgaagg gagaggtctt ctgagctccg 111180

tggcctctac ctgaccctct gggagttggt ccttaaactg cgctctgagt gttaaaatct 111240
acattcaaaa ggcagagaga ggctgtgttg gccttaaaca agagcaagag gggaccctgc 111300
cctggccctc ctcagaccag gccctttccc acatggtgag gaattcacag gccaaggcga 111360
tgtgctcacc ccaagcccta ccctttgcta gacactcgtc tgatgcctgc tgctgtagaa 111420
tttctgctcc aagagtcctg ccgtgctggc ttccagggct ggctgccatc tgtcctcctg 111480
aggacccatg tcctcctgcc ttaagcagtg gttttgggaa agctgggtgt gcaggctggg 111540
atgtgtgccc actttgtggg agatgccctg aacgtgctga gtggagctgg aagtgggaaa 111600
ggaggagggg tgggtcatgg gcagggagct gtggtcttgg gttccagggt gggcttgccc 111660
catgctgcta ctttgaggag cagaatgcag aggaggttga gaattctaaa ttcaaaccta 111720
acattttagt ttgtcacaag gacatatttg ccaggacaga ggatagacca tatttttaaa 111780
ttttatttta tattttattt taattttttt tgagatagag tctcgctctg tcacccaggc 111840
tggagtgcag tggcgcgatc tcggctcact gtaacctctg cctcccgggt tcaagcaatt 111900
ctctgcctca gtctaccgag tagctgggat tgcaggcgcc caccaccacg ctcggctaat 111960
ttttgtgttt ttagtagaga cgggatttca tcatctcggc caggccggtc ttgaactcct 112020
gacctcatga tccaccttcc tcggcctccc aaagtgctgg gattacaggg gtgagccacc 112080
tcgcctggct gatagaccat tttttaaggt cgttagttcg atgtgcagct gttaaatctt 112140
cagacttaag ttatggagag tgagcctccc tttctactct tgccctggac cccacaagtg 112200
ttaggggtga gcctggagag agagataatt gagattggtg ggggcttggt ggtgtggccc 112260
cagcagactg aggctgagtt gaacagggag ttttgaacat tggacccttc tagagtagac 112320
ttttccgggc cacgtcatac agggcttacc ttctcttagg tctgtgcggt gtgtaggtgt 112380
catctgcttg ccatctcctt tctctggagc cccaggagag ctgtacagtg agtatgcttc 112440
cccaacacat cttagatagc actgttatct tagacagctg ttttggggca tgacaggtca 112500
tccttccaat ggggcctttc tctgatgtca aaggtcaaat cctcctgtta gcattccatc 112560
ttgtctttct catctcttca agttaagaga gtcccaggga ccctccccat tcttctgcca 112620
ctccatggct ctcctcttcc tgagaagcac ccctctgcag ggagccccct gagtaaactg 112680
gtagggtcat gtccattcca aactgcacaa tttcacgggg gaaaatggaa accctggagt 112740
gtaactggga tgttgagtgg ggctgcttta ttctaaaaga taaaactcaa ggacgtcatg 112800
ctctctgtct tcaaatatct gaggggctgt catgctgaaa agggaaggga tttattcagt 112860
gttgttggag tgtgaaggaa gaggtggatt aaaattcagt gtgcagagaa gacttttgcc 112920

aaagagtgct gcttagcact ggctggtgct atctttggag ggggtgagcc cgctgtcact 112980
ggaggcgtgc aagtatccct aaaggatatt taatagggaa ctcatgatct agagagtggg 113040
gggacaccct actgtacagc atctaaacct ctcatcccca ataatctgta gctttaggat 113100
tgttttaaat aggatgccag gagttgggaa aggaattaaa gaaattcact gaagtgagga 113160
ccaagctata aaaaaaaaaa atctttattt catgtaccag gatttttttt ttcagttttc 113220
tgctttttaa aatttttttt ctgttaacag tctgaaaaaa aaaaaaagga ctcaccaaga 113280
aaataaatgg aggttagttt cttgaactgg tctgagctgg acatgagcaa tcatccacac 113340
ccctgggcag caacgccctt gcagttccgg tcctggctcc ttccctccgg accccctagc 113400
cccttctcag ccatggcgat gtcaccccac accccagtgg ctttcttcaa gcacacccag 113460
aacccaggcc ttgcgccatg gaaagaagca ctgatcgcct tcccagacgc tctgccagaa 113520
ttcggagaac tggagctagt tttctcttc agacagtgct cgcttgggtg cggttttctt 113580
ggggaccctc ccttctccct tcgctctcat ccttgatccc tttaggtctg gaatctggtg 113640
ggatggcggg caagattggg gtgggagagg ggtagagttc agtttctgcc cagactgagg 113700
gcaacttggt tgttgttacc acaccttgaa ttgtctccca ttgttctgcc ccagggccca 113760
tgacctcccc ctgtacttct gggctgggct ggccgatgtt ctgccccttg ctgacctggg 113820
aaaataactt tcctttccca ggcaaaagac aggaaaggca ggtgagatgt gcaagctcaa 113880
aaagccttac tagccattct ctagaactcc ccagagagct caacctcagg aaatgccggt 113940
gtcaagaaaa atgcaaaccg ggggagactc gcaggcagag gcagggggc ctcaccttga 114000
ccttcagtca cctgggagta acttgcagac tgttctgaaa tttccagctc aggaaagctg 114060
ttggatttct gtcagtctga actggccctt gtcactctgg ggaagaaagg ggagaaacac 114120
aggatgccct tgacctttag tctgtggtgc aagtttaact tttggggttg gtccttacac 114180
tgggatggaa ctgctaaaat tttcctctcc attccctcag ccttgagccc tcccagtaaa 114240
cctcagagga tcctcttttt cacagacccc caaagacact ggggaagccc tggtggcaga 114300
gctcttctcc caaggaagcc tctttaactc tccatgatcg cagcaagggg acacaaagtg 114360
aagaagggct ttggggaccc ctgcgtcttt cccctctttg cctgaacagc tttatgtttg 114420
ctcacatgtg tgtatttttg ctttgacatt ggatgtgggg gcaggtgttc ggggagcaca 114480
gtgaggaggt atatggtgtg tgtgtgtgtg tgtgtctgag aggctgactg atgatgagcc 114540
tgggggcttg gtggcagctg tcctggtcat ccctggcata tcctcggggc aggtggcaga 114600
tcttaagtca cagatacata gagcaagaat gggcctttag tgcttctctg ggtcaatcca 114660
catgcttaca tggggggaaa attaaggccc agagaggcca tgcagcaagg aattccggaa 114720

tccagtcctg gattctagac gggtgccctt cccatgcatg cgagtggtgt gtgtgtgtgt 114780
gtgggtatgt gtgcgtgtgt gggtatgtgt gcatgtgtgt gttcatgtgt atgctctgtt 114840
gggaggttgt gaatgaacac aaaggccagt gtggagttgt tgtcgtccat ggctttggag 114900
ggcatgagtc aatttccttt gagccacgcc cctggccgtg tatgggatgg aagggttgag 114960
actgagtgtg tccctgtgag tgactgcagt gctgggctaa gtggactgtg tatgtgtgtg 115020
tgaacgtgcc tgtgtgcgtg tggggtgtgt ggtctctttc tttgttggat tctgtcttcc 115080
cccattcgca gcaccttcct tgtctgagga agccaccttt ccatcacaga gaccccctgc 115140
agctcactgg gaccttccgc tactccctcc aaccttcaag cccagctctc acctctcaca 115200
acggttttgc tttgtttttg taaatggatt tgtatattcg ttttctgttt ttttttcttt 115260
tacaagttcc ctgctaaagt ttaagtcccc caccccgccc catttttgt tttcacagtt 115320
taaagctgga aaagaattaa aagaaaaata ctatctgatt ttcttgcaag taaatccact 115380
tattttgtat ttacatttat ttatagtctg tggtttttt attaaaaaaa aatcaccact 115440
tgtttttcct ttttcttttg taaaaagaag ccttttgca gtgtcattgt tgaacccgct 115500
gggccccaag ggggcatcag tgagtccaag gacccccaaa gggtcaatga accccttcc 115560
caggggactg gggggcttat gagtcagggg gtccaccatc gccccagggt catcaggtgg 115620
ccctgaggtg aggggtgagg agggagagct gtttcatgtc ccccgggggg gggggtggca 115680
tctcctgacc ccaaggacag gagcttgggg acatgacccc aagaggctca ccctgaggat 115740
tccggggttt ccggcatctt ggtaagccac cggcagcctc ccctctcctt ccctttcctc 115800
aaggcctagg aagtcatcac agtgggttaa ggagcattaa ggactgggaa cctggggcca 115860
ggcaagcccc aagtgtaccc ccctccaggc accctaacgg agaggaggga caagggctcg 115920
gtcacctgga ggcctacgat tgccccatca atgctgggcg gagccggctc gagctctgag 115980
ccttcctgga gttcctgggg cacccaccca ggggctccag ggacctggca gtgactgcag 116040
gctcacctgg ccccagggcc cctgagtctc gccccccaat ctcccaggga ggcagggccc 116100
gctgggggtt aaagggaaca gaaaagtaac tctccccgag ttaaaaaaaa aaaaaaaaag 116160
taacataaac cctgaaaaat acaaaggaca tcccctttcc tttctgttct catttttttt 116220
ttttttgctt taatgttatc ttggttccct tttatttttt catttaaatt gatttttatt 116280
aaatgttaaa ataatggtac atgggaaatc atgcattttc ttttagattt attttctatt 116340
tttaattttt tatccctctc gcttttttt aaagtttgtt ttcttccctc gtttatattt 116400
tcccacattt cctgttgttt tgcttctttg ttcctcttat attttgttct tttttttaaa 116460

atttacttgt tatgtttttt ctcttttttt gtgtgtgtgt gttttttgt tttttgtttt 116520
tttgtttttt ttgtttttg tttttgcttt tggaaggtct cccagcggag ggtctgggtc 116580
tccccgcccc gccccgcccc cggggaccgc gccctcctcc cgcggtcttc tggcgaggcc 116640
cgcggtcttt atacgggggt ggtccggcgg ttggctgtgt tggagtggag agagtccttg 116700
ttctccttct ggatacagtt gtgaacctgg aggaagctgt tatccctgtc ggagttgtag 116760
gtggcggtgg gcgtggtggc ggccttcagg gggtccctgc tgagcgtgta catggagatc 116820
tccgtggacg gcagggtgtt gaagcccttg atgcccacgg gggaggcgtc cctggagtgt 116880
gagggctccg tggagcgcga gctggagcgg ctgcggcgct ggtagcggta gcggtagctg 116940
gggatgcggg tgatggcaga ggcctggagg tagtccgtgg cgcgggccgt ggcccgcagc 117000
tgtttgtgcc ggtcgataaa catgtgcacc gccagcaccc cgaccatctc ggcgatgatg 117060
aaggacaggg ccccgaagta gaaggaccag ccgtatgagt aactattctt tttggagtcg 117120
ctcttggagg ggtctccggc attggcagat atgtacacta tgatgccaat gatgttactc 117180
agacctgcgg ggcgcagggt ggcggggtgg gggatcagag agaaggacgt tagtttctca 117240
ggaagtcggc cacagggcag ccgtaaagga cggggacagc tgtgtgggcc ttccccggtc 117300
ccgcgccttc atgaacaggt ggggcggtgt agatggacat ccgcaagctt cccccttaaca 117360
ttttatcttt ccattcagag agagccacaa gggaagcgct aatggaaaca gacatgggca 117420
gggcgggaga agggaggcat ttcacaaggc gctgagtaac taataataga tattgttcat 117480
tgagccttct ctacctgctt tcactgcttg gtgcttctca agcagggcac agatgaggaa 117540
acaagcacag agaggttaag gaacttgctt aaggctgcac agggcttcaa agctggtgta 117600
gcagcgggtg aaggcgggct gatggagcca ggctggcctg cgttcaaagc cttcgcaagt 117660
taaccttggt ttgagtttcc agatctgtag aatgggagta aggttaagcc ttactcttta 117720
gggccacgga gagggttaaa tgggtgaata catgtgagta ctcttagatg ttggtggttc 117780
cttttttttt ttttaagata cagtcttgct ctgtcaccca ggctggagtg cagtggtgtg 117840
atcacagctc actgcagtct caaactcctg ggatcaagcg atcctcccac cttagcctct 117900
ctagtagctg ggattatgta tgcgtcacca tgcccagctg attaaaataa aaaaatttct 117960
gtagagacgc ggtcttgagg cctcgctgtg ttgcccaggc tggtctcgga ctcctgagct 118020
caagtgatcc tcctgtctca gcctcccaaa gtgctgggat tgcaggcgtg agccactgca 118080
cccggcctga tgttggtcat tcttattaaa tggctcaggc tacacccagg ttctttttct 118140
ggcatctgaa gtgagtgtga ctcatctgtc atgtaactgg gctcagacat ctggatgtgg 118200
gtgcctgcct gctcccacct gagtagaaca gtgaggggag agtccacccct tggtttccaa 118260

ggtgaagctg agtatcccat aggggttgga acagcgaggc acttgggtgc cctctctcca 118320
gcctcctcat gggtttactt gcaccgggaa gggaaagggt aagtggcaat tggccaagta 118380
ccctgagagg aagcgggcat ttgggccttt tctcaagtgg tgggaagaag atggggtgtg 118440
gggatgctcc tggaggattt ggtacaggct cgggagttgc tacaggacag gagccccccc 118500
accaccttcc tcccctgcaa cacgacctag tgcaagtctt ggagatttcc tctcctctct 118560
ccccatctct ctctgccagg ccctcgtggc ccctgagcac ccacacccca gccttcttcc 118620
cagtggcagg actggatcag tggctgttac ctgcagacac gaagaagatg ccggcactca 118680
ggatgatgtt gtgtcgagtt ttgtagaact cgctggctgc gatgcagagg ccacccatga 118740
aaagcagaat cacactcagg attgggaaaa tgctggaggc cctcacggcc cctgtggaac 118800
acagagggtc agggagaaag agaacggcat ggctgtgaga ctgaggcaca cagaggcagg 118860
tgggagagca gccccgaggc gctgggggtt tatggacaca gccttagagg agaggttgct 118920
ttgcaatcct agggagggag agacagcgag caggccactg cccagctcac agccctgcag 118980
gagctcccca ctgcctccag ggccaaactc cagcacaccg tcaggcacac agggccctgt 119040
gtgacttggc ctctgcccac ttccagctcc cacggctccc agtcctcatg ttctctctcg 119100
tcccaccaca tcaaacttcc cacgacatgt catttcatgc tgctgacttt tgaaatacag 119160
agcttcctac tggaatgtct ttcctattct tcactcagca aactcttctt catccttcaa 119220
aacccagctc gaagtcccct cttctgtaaa gccttccctg acttccttag gcaaagttat 119280
gagctccctc gtctgcactt tggggccctt gggcacgctg agaggcagtg tggtatagtg 119340
gttaggtgga accacgtggg ttggatttga gtctggctgc agcatttatt agctgtgcaa 119400
tagaaaaagt atctcacctc tgtgtgcctc agtttcctca tctgtaaagc agggatggta 119460
ataatgccaa gctcctaaga ttgttgtgag gattaaatga gttgattcag gcaatgcact 119520
tagataagtt tctggtgtct ataataaaca ttcaatgcat gatattataa taaatatttg 119580
tgtatacata tgcttccacc atgaaccatg ggtcgtgaga caaggactgt ggctttacaa 119640
agaaaaagtt tcttgtcttt atcctctctg ttcaacgaca cagtagtctg ccaatagaag 119700
ctcattaagt gaataaatgt ggggtcgtgg tccagaagga aggaacaggc acattgcaaa 119760
gaaaacaaag taagaagaga aacccctcta gataaggact gacaaacagg accggagaag 119820
aaaagaatat ggtaatgaaa agggagaaac agaaggtgag ggccagggct cctacagttg 119880
ggggtggatg ggggaaaggg gggacaggtg gctaagggca gaggtcgggg ctacatgtgt 119940
ttgtgggggg agcagcacct gaatgaggac ccagaggtgt tggggagccc ttcacaaagt 120000

gtctttgcga agtaaaacat ttttttttta atccaaattc aaataggcag tgagtgacct 120060

caggacccag ctccgtgtcc tgggagccat gggctaggca ggaggcagag ctggcttgag 120120

gcaggggtga gggaaaatat gtcttcttta ttattattat tttttgagac ggagtcttcc 120180

cctgtcaccc aggctggagt gcagtggtgc aatctcggct cactgcaact tctgcctcct 120240

gggttcaagt gattctcctg cctcagcctc ccaagtagct gggactacag gcgtgtacca 120300

ccatgcttgg ctaatttttg tactttttagt agagatgggg tttcactatg ttggccaggc 120360

tggtctcaaa ctcttgacct catgatctgc ccaccttggc ctcccaaagt gctgggatta 120420

caggcttgag ccaccgtgcc tggccaaaga tgtcttcttt aaatggtgct taagtggttt 120480

ctaaggaagt tgagtcctga taattacagg accctttggc caagcccagg gattggtcag 120540

ggaggttggt tttggagggg aatgtgccag gagcggagct tcctcttatc cccatccccg 120600

tccccacccct tttgggtggg agtgtgttca agaaggatct gtgagaagag aatttctcta 120660

tatagaactg tagggatttt tctttttctt ttttaaaatt tatttttatt tttatttttt 120720

gagatggagt cttgctctgt tgcccaggct ggagtgtagt ggtgtgatct cggctcactg 120780

cagcctccac ctcccaggtt caagcgattc tcctgcctca gcctcccaag taggtgggac 120840

tacaggtgtg cgccatcaca cctggctagt tttttgtattt ttagtagaga cggggtttcg 120900

ctatgttggc caggctggtc ttgaactcct gacctcaagt gatctgcccg cctcggcctc 120960

ccaaagtgct gggattacag gcgttaaaag gggattttag gcagtttgct gagatgtgtg 121020

tgatgtgaaa actcttcttc tgtcctcacc atggatctgc agcatagtct acactgctca 121080

caaatgggtg agtgggttat ttggggggga cctgaagaag ggcagggctc ttggggcaaa 121140

actgagctgc atatagggaa gcaggggtgg gaggatgggg gcttggggtg gctgggctac 121200

tctgcagcct cagcaccctc cttctcttgg gcgggatggg gctgctcctc cacagacccc 121260

agggaggtgt tctctccttg caaatcattg ctaagacaac acgctgtatc cctaacctga 121320

tccccccagcc caaacacacc cacatccaca cccacgcgtg acagacatgc atgactaaaa 121380

agccacctta actctcatct ttataagcac atgaggatgg tgagagctta ctgaaaaccc 121440

aggagaagag agagaatatt tgttaaacac ccattcggtg ttgggtcttg agcaggtacc 121500

taacatatat gatataattt catcctcata acagtccggc agggtgtgtt tttttgcccc 121560

aatttacaga caagaaaatt gaggttcaga gagagaaact cccctgccac ccagctagtg 121620

aaccaggatt catatccaga ccagctcaac ttttggagca ccctgtagtc tccctatgtg 121680

gcttccaagg agcccaggaa gggtgagtgc cacagggcct ggagaactgg gtttgggtcc 121740

cacctgtgcc actcacttgc tgtgtggcta aggcgggtgc tcacttcctc tgtttttccc 121800

ctgtgtaaca tggggtatgg cctgttagat ggtttctttt tgtttgtttg ttttagatac 121860
agagtcttgc tctatacccc aggctggagt gcagtggcgt gatcttgact cactgcaacc 121920
tccgtcttcg ggttcaagc aattctcctg cctcagcctc ccaagtagct gggattatag 121980
gcgcccgcca ccatgtccgg ctaatttttg tatttttagt agagatgggt tttcgccatg 122040
ttggccaggc tggtctcaaa ctcatgacct caggtgatcc accggcctcg gccttccaaa 122100
gtgctgggat tacaggcctg agccaccgcg cccggccgtt agatagtttc taatagctct 122160
gccctttcca tgtggacatg gtcctggcca gccacaaagg ggaatgacag aagagagaag 122220
gaaagaaaga aagaggtcgg tgtggcttcc gaggcgcagc agcagcagct cagaggaaca 122280
ggcagaagaa aggctctggc cttccccctc caagaaagtg gggtcttact acccacagga 122340
tgcctgcagg tcgccgaccc aattgtgccc tcacagcaaa tggactcaca gcagcccagg 122400
gcttgatttt tccagttgag ccccatctgc tgtgggaacc cggatgcccc agctcagccc 122460
tcctgccagc agggggaggg agcgtcggct gcggagggag ctgggatgca tgcgtgtggg 122520
cagccagagg ccaggcatgt gtggacaaga tggagggcgg cgggagagca gggaggggtc 122580
tgctgtgttg cagccagcaa agagcaatgt ggaggaatca gaacggcttc agaagccacc 122640
aaggcagcgt atgacatgct ctaaataatg accaccagcg gggaatacaa acagaagcct 122700
cttcggcaca gaagagccag ccccaagctc tggcctttcg tggaagaggc ctctttgccc 122760
agaaagaagg caacaggccg ggcgcggtgg ctcacgcctg taatcccagc actttgggag 122820
gcagaggtgg gtggatcacc tgaggtcagg agttcgagac cagcctggct aacatggtga 122880
aaccccgtct ctactgaaaa aaacacaaaa attagccggg catggtggtg cgtgtcagta 122940
gtctcagcta ctgggggtgc tgaggcagga agatagcttc aacttgggag gcggaggttg 123000
cagtgagctg agatcgcgcc actgcacccc agcctgggca acagagcaag actccatctc 123060
aaaaaaaaaa aaaaaaaaaa aggcaacagt gggcaaccag caaatagcac catgcttagg 123120
ccactagact tggcagggcc cagatccagg tgggaaggaa gctggtttag gagcaagcag 123180
ggacttctac attggagacg tttcttgaag gaggtatttc tggctgggta gtgtcacaaa 123240
cggaatgggg attttggagt tagtcacact tgactttgaa tcctcgcttt gtcagttatc 123300
aacagtgtga cccttgggca agggtcatta ctgctctgag cctcagtttc cccatcctgt 123360
gaaatgggaa tagtaaaaat aatatttagc ttataggaat gttgtaaggc cttgctgctg 123420
caagtgtggc ctgaggccca gcggcattgg catctgatta gaaaggcagc cctgccaggc 123480
atggtggctc atgcctgtaa tcccagcact ttgggatgct gaggtgagcg gatcacatga 123540

agtcaggagt tcgagaccaa cctggccagc atggcgaaac cttgcttcta ctaaaaatac 123600
aaaaattagc cgggcgtgac ggtaagtgcc tgtaatctca gctacttggg aggctgaggc 123660
aggagaaccg cttgaacccg ggaggcagag gttgcagtaa actgagattt cgccactgca 123720
ctctagcctg ggtgacggag cgaggttcca tctcagaaaa aaagaaaaaa gaaatgccgc 123780
ccctcagctc tttcccccaa ctgagtcata atctccattt taatgagatc cccagagcaa 123840
gatttgcatg catatgaaag tttgagaagt gctgttataa gaattaaatt ggggctgggc 123900
tcggtggctc acacctgtaa tcccagcact ttgggaggcc gaggctggtg gatcacttga 123960
ggtcaggagt tcaagaccag cctagccaat atgatgaaac ctcgtctcta ccaaaaataa 124020
aaaaattagc tgggcatggt ggtgcacacc catagcccca gctacttggg gggctgaggc 124080
aggagaatcg cttgaacgcg ggaggcagag gttgcagtga gccaggatct caccactgca 124140
ctccagcctg ggcgtcacag caagattctg tctcaaaaac aaaaaaaaaa aaaaaaagaa 124200
ttaaattggg tcctaccttt tactgtgtct cacactagaa gttgcacagt aaaaggtagc 124260
aatttttatt tctgaggtcc ctcttcccaa aacatcagtc caggcataac ttccctataa 124320
attgtcctca cttcctacaa agccaagcat ggtcttgttg ccaaaatcta tcacaagagt 124380
caggaaatat ctgatttatt taatgaacaa atatttactg gtctcctatg agtaagcata 124440
tggcacttca cattacctga caacatttat ggagcccctc ccctgtacca ggccttgttc 124500
taagagcggt gtaaacctca taccagcccc atgaagccat gggctttggc ttcaaggaga 124560
ttacacacgc ctaaagctga cactggcaaa cttgttctgt gaagggaaag acagcaaata 124620
ttttcatctt tgctggccat atggtctcag ttgcaatttc ttaactttgc agttgtagca 124680
cataaacagc cataaacaat atgtaaacaa atgaacgtgg ttgtcttcca ataaaacttt 124740
atttacaaaa tcactttggg aggccgaggg ggctggatca cttgaggtca ggagttcgag 124800
accagcatgg ccaatatggc gaaaccccat ctctactaaa aatacaaaaa ttagcccggc 124860
gtggtggcgc atgcctgtag tcccagctac tcgggagccc gaggcaggag aatcgtttga 124920
acccaggagg cagaagttgc agtgagctga gatcaagcca ctgcactcta gcctgggcag 124980
tgggtgacag agtgagtgag actccatctc aaaaaaaaaa aaaaaatcag gtggtgggct 125040
ggatgggctg gatttggcct gctagtcata cttggccagc tgtggccaag agtatactct 125100
atactgggga aaaggccacg tggtccagag cagggagatg ctttgctcta ggctagctgt 125160
gaatccagtg agcaaatatg gactgagtgc ccaccgctgt gctagacctg ggcttggcat 125220
gagagacatg aggggtccaa aacaggcctg gttcatgtct ttctagagct tatactctca 125280
tgaaggacat gtatgccatc agataatcac acagcctgga taacgtgcta tgaaagaaaa 125340

gtacctatat ggcaccatga gggtatgtga caggctaatg tcacatgtag acaactaatg 125400
tccatagaga gcttagagta tgccgaggac tgttttgagc actgcacata cacaaactcg 125460
ttagttctca ttacaactct gtgaagtaag tacttcatat tatttttatt ttttaaattt 125520
attttagttc tacttattgc attatcttaa gcagcatata atagtatggc ctctgaaatg 125580
tgatagacct ggattcaaat ccaatgcttt tgtttttttac tttttaatta ttattattat 125640
tttttgaga cagagtcttg ctctgtcacc caggctggag agcagtggcg tgatctcggc 125700
tcactgtaac ctctgcctcc tgggtttgag tgattcttgt gtctcagcct cccaagtagc 125760
ttagattaca ggccatgtgc catcacacct ggctaatttt tgtattttta gtagagacgg 125820
ggtttcacca tgttggccag cctggtctcg aacttctggc ctcaaatgat atgcctgcct 125880
cagcctccca aagtgccggg agtgcaggcg tgagccacca cacatggcct atataggtat 125940
tttaattatc cccactctac agagaccaaa ctgaagcaag gagaggttaa gccatttgtt 126000
caagatttgt gaatccaggc agtctgactc tagggtctgt gtgtctaacc actgcattcc 126060
cttcttttca ggctctacac tttgctgccc ttcaaagcat cctctgagct tatgtgggga 126120
tcaggacagg tctccctgag gaagtggtgg tagagctgac ctctggcgaa taaggagcag 126180
ctgattaggc acaatgaagg cagggctgtg ggagagagag cagcaggagc cgaaggtgga 126240
ggaggcatgg ctccttcaga gacctggaag aaggctggat cacgaggagc cagtggaaga 126300
gtgtggggag cactgaaggg aggagccagt ggaggagtgt ggggagcacc taaggagagg 126360
aggcaggcgg gtctgggcca cgtggggcct catgagttga gctaaagagc ttagctttat 126420
cccaagagca atgggaaact ttaaagggct tagaacaggc agggctgtca tgatctgatt 126480
tgcatcttaa gaagcaaacg gattacgaag gggtcaaggg tggctccagg gaagcagtga 126540
gaaggctact gcagctgatc ggagaggagt gatgccggtg cttgggccag ggtaggtaca 126600
aagggcatgg acagaggcag atgtgtctga gagatgttta ggaggtgaat tgaagcttga 126660
tggatggata tgggtagtga agagggtggc gttgaggtta acttctaggt ttcagacttg 126720
ccagctgggt ggaaaaaacc acttaggggg actgggagag gacccagcct agcagtgagt 126780
agagagtagg ggaggagcct gggcgaggtg gctcacgcct gtaatcccag cactttggaa 126840
ggctgaggcc ggtggatcac ctgaggtcag gagttcgaaa ccagcctggc caacatggtg 126900
aaaccccatc tctactaaaa aaatacaaaa ttagccaggg gtggtggcgc atccctgtaa 126960
acccagctac ttgggaagct gaggcaggag aattgcttga acctgggagg tggaggttgc 127020
cgtgcaccaa aattgtgcca ttgcactcca gcctgggcaa caagagcgga actctgtctc 127080

aacaaaacaa aacaaaacca aaacaaaaca aaacaaacaa aaaaagagac tagaggagga 127140

agatc 127145

<210> 27
<211> 2406
<212> DNA
<213> Human

<400> 27
agtttactct acatcatagc agagaaaatg gacaaaacac agctgttttg catgtaggag 60

aatactaacc ctgcacagat tgtgatggtg atgtggaata tactaaagcc tagaacgcac 120

ctcctctgca tgactaatat gttctgcaca agacatgaag gcacagacag cactgtcttt 180

cttcctcatt ctcataacat ctctgagtgg atctcaaggc atattccctt tggctttctt 240

catttatgtt cctatgaatg aacaaatcgt cattggaaga cttgatgaag atataattct 300

cccttcttca tttgagaggg gatccgaagt cgtaatacac tggaagtatc aagatagcta 360

taaggttcac agttactaca aaggcagtga ccatttggaa agccaagatc ccagatatgc 420

aaacaggaca tcccttttct ataatgagat tcaaaatggg aatgcgtcgc tatttttcag 480

aagagtaagc cttctggacg aaggaattta cacctgctat gtaggaacag caattcaagt 540

gattacaaac aaagtggtgc taaaggtggg agtttttctc acacccgtga tgaagtatga 600

aaagaggaac acaaacagct tcttaatatg cagcgtgtta agtgtttatc ctcgtccaat 660

tatcacgtgg aaaatggaca acacacctat ctctgaaaac aacatggaag aaacagggtc 720

tttggattct ttttctatta acagcccact gaatattaca ggatcaaatt catcttatga 780

atgtacaatt gaaaattcac tgctgaagca aacatggaca gggcgctgga cgatgaaaga 840

tggccttcat aaaatgcaaa gtgaacacgt ttcactctca tgtcaacctg taaatgatta 900

tttttcacca aaccaagact tcaaagttac ttggtccaga atgaaaagtg ggactttctc 960

tgtcctggct tactatctga gctcctcaca aaatacaatt atcaatgaat cccgattctc 1020

atggaacaaa gagctgataa accagagtga cttctctatg aatttgatgg atcttaatct 1080

ttcagacagt ggggaatatt tatgcaatat ttcttcggat gaatatactt tacttaccat 1140

ccacacagtg catgtagaac cgagccaaga aacagcttcc cataacaaag gcttatggat 1200

tttggtgccc tctgcgattt tggcagcttt tctgctgatt tggagcgtaa aatgttgcag 1260

agcccagcta gaagccagga ggagcagaca ccctgctgat ggagcccaac aagaaagatg 1320

ttgtgtccct cctggtgagc gctgtcccag tgcacccgat aatggcgaag aaaatgtgcc 1380

tctttcagga aaagtatagg aaatgagaga agactgtgac aactcatgac ctgcatcctt 1440

aatatccagt gacttcatct cccctttctt caccacaatt ccaggcaatg gcctgtcgga 1500

ccagacaatt ctaccactgc aaagagttgt aaccattttc tggtatcaca tttatttttc 1560

aagacatact tttcaagaca tcattcactg acccactacc tgcattgagt ataaatgcct 1620

ggatgttaag gattccaatt taactttgaa aagaactgtc tcattcattt acatttctgt 1680

tacagtcagc ccaggaggtt acagtgagct ctccactaag aatctggaag aaatgcatca 1740

ctaggggttg attcccaatc tgatcaactg ataatgggtg agagagcagg taagagccaa 1800

agtcacctta gtggaaaggt taaaaaccag agcctggaaa ccaagatgat tgatttgaca 1860

aggtatttta gtctagtttt atatgaacgg ttgtatcagg gtaaccaact cgatttggga 1920

tgaatcttag ggcaccaaag actaagacag tatctttaag attgctaggg aaaagggccc 1980

tatgtgtcag gcctctgagc ccaagccaag catcgcatcc cctgtgattt gcacgtatac 2040

atccagatgg cctaaagtaa ctgaagatcc acaaaagaag taaaaatagc cttaactgat 2100

gacattccac cattgtgatt tgttcctgcc ccaccctaac tgatcaatgt actttgtaat 2160

ctcccccacc cttaagaagg tactttgtaa tcttccccac ccttaagaag gttctttgta 2220

attctcccca cccttgagaa tgtactttgt gagatccacc ctgcccacaa aacattgctc 2280

ttaacttcac cgcctaaccc aaaacctata agaactaatg ataatccatc acccttcgct 2340

gactctcttt tcggactcag cccacctgca cccaggtgaa ataaacagct ttattgctca 2400

aaaaaa 2406

<210> 28
<211> 530
<212> DNA
<213> Human

<400> 28
tgtttttcac acactggatg tttattatta gaaaatagct tctatcagct gtcagtacca 60

aacaagttga aaggagcgag cttctcacca tatttttttt tctccttaat gatatttaaa 120

taaacagctc actgtgtgag ctcacgccct tttccctttt aaaaactgaa taattaaatg 180

aagtttagta caaaacattc ttcaaatatg acttgttctg catctgttat gctgtctcct 240

tgagtaatgg acgcgaaaga gatgaaaaag accactcagg ctaccaaagt accccaaaga 300

atccatacga gaaactgaga aacaaactaa ctcaaataag acccaaccaa accaagaaac 360

cagtttttac gttgactttt tgattttgat tatcatctaa gtttaatata tatatatatg 420

tgtgtgtgtt tgaaatagta ataaaaaagg aagaattgaa ttgcatccgt agcaggacaa 480

ccttcctcat acgttaaaga ggtgttcaga aaattccata cagtatctgc 530

<210> 29
<211> 1785
<212> DNA
<213> Human

<400> 29
gggggaatta tgttgatgac tattctctct attctctctc tctctctttt tttttttttg 60
gagatagagt cttgctctgt cacccaggct ggatcttggc tcgctgcagc ctctgcctcc 120
tgggttcaag cgattctcct gccttggcct ctcgagtggc tgggattgca ggcacctgcc 180
accgcgcccg gctagttttt gtatttttgg cagagatggg gtttcgccgt gttggccagg 240
atggtctcga tctcttgacc tcatggtctg cctgccttgg cctcccaaag tgccggaatt 300
acaggcatga gccaccacac ctggccactg ttctcaaatt gtattatgga gttttttttt 360
ttttacaaaa tatggatata ttttaattta ctcaaatggg aactactgat aagcagttct 420
tatttttcca gcataagcaa ggctacaata aatatctttg aatatatgta ctgatgcttt 480
ttgtttttttg ttgaagctat atcccaataa gtgataagta cggtctaaga gagaacatgt 540
tttttacaat tttgattgat atcatattgg gccacgcatg gtggctcagg cctggcatcc 600
cggcactttg ggaggttgag gtgggaggat agcttgagct caggagttca agaccagctt 660
gagcaacctg gtgagacctc atctctacta aaaaaacaaa acaaacaaac acaaaattag 720
ctaggtgtgg tggcatgtgc cagtagtccc agctagttgg gaggctgagg tggaaagatt 780
gcttgatcct gggaggttga ggctacagtg agctgtgatg gtatcactgc actctatcct 840
ggacaacaca gcaagaacct gcctcaaaca aatgtatttg gttgatattg tatcagattt 900
cttctgaaaa acgttttaat ggtttagact ttcaccaagt gcaagaaact ggcattttct 960
ttgtaactgg cctggaatgt taccactctt ttaaactttt gtcaagatga tcgtgagaaa 1020
tagtatctaa ttacttcaat ttgcatttcc ctgactccta atgaagttca gcatctcttc 1080
aaatctttat tgggcatttg gattttctct tcagtgaatt gcttcatcat attctccatt 1140
tattctaaag ttgtgttcct atttgtcgct ttcaaatcta gtttggtgga atccttgcat 1200
gttagaaacc ttaaccctcg taatatgtgt tgtagatatt tttccctcgc ctatgagttg 1260
tctttcatcc ttgagcatga gttttagagt cagaagaaca acagtaggat ttgaatcatg 1320
ttacgttatt ttctagttgt cgtatttttt atttcttcag cctcttagaa tcttagtttc 1380
ctttaaaatt gagataatag tatctacttt attcaaaaaa attttttggc tggacgcggt 1440
ggctcacgct tgtgatccca ccattttggg aggccaaggc aggcggatca cctgaggtca 1500
ggagtttgag accagcttgg ccaacgtggt gaaaacccat ctctactaaa aatacaaaaa 1560

ttagccaggt acagcggggc atgcctgtag tcccaggtac tcgggaggct gaggcaggag 1620

aatcacttga acccgggagg cagagatgag gtagtgagct gagatcgcac cactgcactc 1680

cggcctgagt ggtagggcga gactctgtct caaaaaaaaa attgtttttt catttatttg 1740

tttgttgaga ctccacttca aaaaataaaa aaaaaaaaaa aaaaa 1785

<210> 30
<211> 2653
<212> DNA
<213> Human

<400> 30
gaagttacaa gagtagtaga tgaacaacta aaggcgttgc ttgagtccat ggttgatgct 60

gctgagaatc tttgtcccaa tgtgatgaaa aaagcccaca ttcgacaaga cttgattcat 120

gccagcaccg aaaagatttc tattccacgt acctttgtta aaaatgtcct gttggagcag 180

tctggaattg atatccttaa caaaattagt gaagtaaaat tgacagtggc ctcgttcctg 240

tctgatagaa ttgtggatga aatcctggat gcactctcac attgccatca taaactggct 300

gaccatttca gcagacgtgg caagaccctt cctcaacaag aatccttaga gatcgagctg 360

gctgaggaga ggccagttaa acgttccatc atcacagtgg aggagctaac agagatagag 420

cgtttggaag atctggatac ctgtatgatg acccctaaat ccaaaaggaa gagtatccat 480

agccgaatgc tgcggcctgt ttctagggct tttgaaatgg agtttgatct agataaagcg 540

ctggaagagg taccaattca catcgaagac ccgcccttcc catccctcag acaggagaag 600

cggagctcgg gatttatctc tgagttgccc tctgaagagg ggaagaagct ggaacacttt 660

accaagttaa ggccaaaaag gaataagaag cagcaaccca cccaagcagc ggtctgtgct 720

gccaacatag tctcacaaga tggtgaacag aatggtctca tggggagagt ggatgaaggt 780

gtagatgaat tttttaccaa gaaggtgacc aaaatggatt ccaagaaatg gtcaacaaga 840

ggctcagagt cccatgagct taatgaagga ggagatgaaa agaaaaagcg agattctcgg 900

aaaagtagtg gctttctcaa tttaatcaaa tcccggtcca aatccgagcg accaccaacg 960

atcttgatga cagaagaacc ctcctcacca aaaggggcag tcagaagtcc acctgtggac 1020

tgtcccagga aggacacaaa ggccgccgag cacaatggca attctgaacg gatagaggag 1080

ataaaaacac ctgactcctt tgaagagagt caaggggaag aaatagggaa ggtggaacgg 1140

agtgacagca agagcagccc acaggcaggg cggaggtatg ggtccaggt gatgggcagt 1200

ggtctgctgg cagagatgaa agccaagcaa gagaaccgct ttggtttggg aacaccagaa 1260

aagaatacca aagcagaacc caaagcggaa gcaggctcca ggtctcggag ctcatccagc 1320

acacctacga gcccgaagcc cctcctgcag tcccccaaac ccagtctggc agcacggccc 1380

gtcatcccgc agaaaccaag aaccgcctca cggcctgatg acattccaga ctctccatct 1440

agcccgaaag ttgcccttct tccacctgtc ctgaaaaaag ttccttcaga caaagagaga 1500

gatggccaga gtagccccca gcccagcccc aggacatttt cacaggaagt ttcaaggaga 1560

agctggggcc agcaggccca ggagtatcaa gaacaaaagc aacggtcctc cagtaaagat 1620

ggccatcaag gcagcaaatc taatgactcc ggggaagaag cagaaaaaga gtttattttt 1680

gtgtaaaggt cacccacgca gaagtcttcc tgtgcagggt gctttggtag ccatcagaga 1740

ggaaccaagg gcaacatctt ttcttcccag gcgttcttct ctgggtgctt tattctcttc 1800

tttttcttta tttcgccccc acccccatcc cctgcctttt tttttttttt ttttttgtat 1860

agaaacagat ccatttcttg gtaatcaaag cacatttgtt tggtcttcct ccaacccttt 1920

gcatttgatt tctaaacatt ccttcatatg cctttaatga aagccagcaa ttatcccatg 1980

ggccctactt gaatttatct gaggcagcta cagattgccc tgcaagatga gtttttggag 2040

ataaatgaaa taactggaca cacactcaca caagtaacac cacagcagac ctcggagtac 2100

tgctaagtgt acctgtgtca aatccgcaca ggactcaata tagcaattta ttcttgatgt 2160

atgcaattgc acattgtaat tatattaaca gagcacacta ataatttgta tagattatat 2220

atattagatc ttgggtatgg tttttacctt ctcccatggg gaacttcttc cttcctgatg 2280

tggaattgta catttaaagc ttggtcggtg acctttgcat accatcaacg agcacagcta 2340

agaacagagt gagagaggcc catggctgat tttaccatgt gcccagatta atgtatatag 2400

ttgattggaa tgaggtttta tgaatattca tgtttttgaa ggcctttaat ttctgtctgc 2460

atattagctt ttaatgtgtg attttaagag agaatacttt gacacctgta aaaatcaaaa 2520

tactactctt tataagacat ttcacaaata ttcacttaca ttacaggctg gaagtatttt 2580

attcatatgt atatttatac caataaaatg attttacaag tggaaaaaaa aaaaaaaaaa 2640

aaaaaaaaaa aaa 2653

<210> 31
<211> 1379
<212> DNA
<213> Human

<400> 31
tgcaagatgc ccctgaagct gcgggggaag aagaaggcca agtccaagga gaccgccggg 60

ctggtggagg gcgagccgac gggcgcgggc ggcgggagcc tctcagcgtc ccgggctccc 120

gcacgcaggc tggtcttcca cgcgcagctg gcgcacggta gtgccacggg ccgagtggag 180

ggcttctcca gcatccagga gctctacgcc cagatcgcgg gcgcgtttga aatctcgccg 240

tcggagatct tatattgcac tttaaacaca cctaaaattg acatggaaag actcttagga 300

ggacaactag gactagaaga tttcatattt gcccatgtga aaggaatcga aaaagaagtg 360

aatgtgtata aatctgagga ttcacttggt ctcaccatta cagataatgg tgttggctat 420

gcttttataa agagaattaa agatggtggt gttattgact cagttaaaac aatctgtgtt 480

ggggatcata ttgaatccat aaatggagaa aatattgttg ggtggcgtca ctatgatgtt 540

gctaagaagt taaaggaatt aaaaaaggag gaactcttta ctatgaagtt aatagaacct 600

aagaaggcat ttgaaataga gctgaggtca aaggctggaa agtcatcagg agaaaaaatt 660

ggttgtggaa gggcaacact tcgcctgaga tcaaaaggtc ctgccaccgt ggaagaaatg 720

ccttctgaaa ccaaagcaaa ggcaattgaa aagattgatg atgttcttga gttgtacatg 780

ggaattcgag atattgattt agccaccaca atgtttgaag ctggaaagga caaagtaaat 840

ccagatgaat ttgctgtggc acttgacgaa actcttggag actttgcgtt cccagacgaa 900

tttgtctttg atgtttgggg agtcattggt gatgccaaac gaagaggatt atgatgtgta 960

cactccatct ctgaagaaac aacccatcgt tcttttttt ctctttttta aaaagtccta 1020

taagatctgt ttttggacac ctttactaac tctggtttaa tttcatgtgt atggaatata 1080

ttctttgaaa tataattttg gtaattttga tttctgggca ctttttaaca ttgctgatgt 1140

agtatgctta agagaaatga cctaaataag gatcaattgt aatattcatt caaaaggttt 1200

ttaaaagtaa gttttaagga gtatttctcg acagatgatt ttcttctcca ttaataccca 1260

tgctttgttt ttcacatata aatagatgat ttcaatagct ttgtagtttt ttttcaaaat 1320

cttaatgtaa actaggattg gagtatgatt tacctcatag tatcttcact gtgttatcc 1379

<210> 32
<211> 585
<212> DNA
<213> Human

<400> 32
tttttttttt ttttaaaaaa gagcatttta ttttaataaa gaataaaaga gatcaatata 60

ctgttttaat ggatacaaaa ataaatattc attcagcata ttaaagatat gtgctttgac 120

attcatttga attggagatt caagcctatt gttatcttat gaacacttca gcaaacagga 180

ctgccattct taaaaatata atgctttgtt ggacaaaagg gacaagccac gtcccctggt 240

cctctcctct attcgcctgt gaactccatc cacacgtaaa ggacctctgg gtctgactgt 300

cccctccaca ggcatggtgc tgggaaaagg aaacaggcat atctggcttt tcagatttta 360

aaccggaaac tctcacagtc acaaatccac catgagactt gggagattgg atgagctgtc 420

tcccaaaccc taacaccttc caccttctca aaatgaaggc tgccctttca ctgggaggtt 480

ctgaatgcgg gatggtgctg actcaggctg ggcacaaagg agaaaggagg acatggaaaa 540

tccgacaatt caaagtacaa atatttcaaa cacatgtgaa aacca 585

<210> 33
<211> 1964
<212> DNA
<213> Human

<400> 33
tgatgacaac aatggaagca gtggagtccc cggagtccct ggccgccgtt gcttacctgc 60

tgaaccttgt cctgaagcgt gttcccagcc ctgtgcttat taagaagttc tctgatacct 120

ccaaagcctt catggatatc atgtcagctc aggccagcag cggctccacc tctgtcctcc 180

gatgggtcct ttcctgcctg gccacccttc tgcggaagca agacctggag gcctggggct 240

accccgtgac ccttcaggtg taccatgggc tgctgagctt cacggtgcat cccaagccca 300

agatccggaa ggctgcccag catggagtat gctcagtcct caagggcagt gaattcatgt 360

ttgaaaaggc ccctgcccat catcctgctg ccatttccac tgccaagttc tgcatccagg 420

agattgagaa gtctggaggc tccaaggagg ccaccaccac gctgcacatg ctgacgctgc 480

tgaaggacct gctgccctgc ttcccggaag gcctggtgaa gagctgcagt gagactctcc 540

tcagggtcat gaccttgagc catgtgctgg tgacagcctg tgccatgcag gcctttcaca 600

gcctcttcca cgccaggcct ggcctgagca ccctgtcagc agagctcaac gcccagatca 660

tcacggccct gtacgactat gttcccagtg agaatgattt acaacccctg ctagcctggc 720

ttaaggtcat ggagaaagcc cacatcaacc tggtgaggtt gcagtgggac ctggggctag 780

gccacctccc tcgctttttt ggaactgcgg tgacctgcct cctttcccca cacttgcaag 840

tgctgactgc tgctacgcag agcctcaagg agatcctgaa ggaatgcgtg gctccccaca 900

tggctgacat tggctccgtg acctcctcgg cctcaggccc tgcccaatct gttgccaaga 960

tgttcagggc agtggaggag ggcctgacgt acaaattcca tgcggcctgg agctccgtgt 1020

tgcagctgct gtgtgtcttc ttcgaggcgt gtgggagaca ggccgaccct gtgatgagga 1080

agtgcctcca gtccctgtgt gacctgcgcc tctcccctca tttcccccac acggcggctc 1140

ttgaccaggc agtggggct gcggtgacca gtatgggacc tgaggtggtg ctgcaggctg 1200

tgcctttgga aattgatggc tctgaggaga ctctggattt cccacggagc tggctgctgc 1260

ctgtcatccg agaccatgtt caggaaacgc gacttggttt ttttcaccac ctacttcttg 1320

cccctggcta acaccctgaa gagcaaagcc atggacctgg ctcaggcagg cagcacagtg 1380

gaatctaaga tctacgacac actccagtgg cagatgtgga cactcctgcc tgggttctgc 1440

acaaggccta cagatgtggc catctccttc aaagggctgg cacggacgct gggcatggcc 1500

atcagcgagc gtccagacct gagggtcacc gtgtgccagg ccctgcgcac cctcatcacc 1560

aagggctgcc aggcagaggc tgaccgtgct gaagtgagtc gctttgccaa gaactttctg 1620

ccgatcctct tcaacctgta tggccagccc gtggcagccg ggacactcc agcccctcgc 1680

cgggctgtgc tggaaaccat cagaacttac ctcaccatca ctgacactca gttggtgaac 1740

agtctcctgg aaaaagccag tgagaaggtg ctcgaccctg ccagctctga ctttaccaga 1800

ttgtctgtcc tggacctggt cgtggccttg gctccgtgtg ctgacgaagc tgccatcagt 1860

aagctatact ccaccatccg gccctaccta gattgctaac aaatcagaaa tatgacaatt 1920

aatgattaaa gactgtgatt gccaccaaaa aaaaaaaaaa aaaa 1964

<210> 34
<211> 2599
<212> DNA
<213> Human

<400> 34
aaatccgagc ctcgcgtggg ctcctggccc ccgacggaca ccaccaggcc cacggagccc 60

accatgccgc gcccggcccc cgcgcgccgc ctcccgggac tcctcctgct gctctggccg 120

ctgctgctgc tgccctccgc cgccccgac cccgtggccc gcccgggctt ccggaggctg 180

gagacccgag gtcccggggg cagccctgga cgccgcccct ctcctgcggc tcccgacggc 240

gcgcccgctt ccgggaccag cgagcctggc cgcgcccgcg gtgcaggtgt ttgcaagagc 300

agacccttgg acctggtgtt tatcattgat agttctcgta gcgtacggcc cctggaattc 360

accaaagtga aaacttttgt ctcccggata atcgacactc tggacattgg gccagccgac 420

acgcgggtgg cagtggtgaa ctatgctagc actgtgaaga tcgagttcca actccaggcc 480

tacacagata agcagtccct gaagcaggct gtgggtcgaa tcacaccctt gtcaacaggc 540

accatgtcag gcctagccat ccagacagca atggacgaag ccttcacagt ggaggcaggg 600

gctcgagagc cctcttctaa catccctaag gtggccatca ttgttacaga tgggaggccc 660

caggaccagg tgaatgaagt ggcggctcgg gcccaagcat ctggtattga gctctatgct 720

gtgggcgtgg accgggcaga catggcgtcc ctcaagatga tggccagtga gcccctagag 780

gagcatgttt tctacgtgga gacctatggg gtcattgaga aactttcctc tagattccag 840

gaaaccttct gtgcgctgga cccctgtgtg cttggaacac accagtgcca gcacgtctgc 900

atcagtgatg gggaaggcaa gcaccactgt gagtgtagcc aaggatacac cttgaatgcc 960
gacaagaaaa cgtgttcagc tcttgatagg tgtgctctta acacccacgg atgtgagcac 1020
atctgtgtga atgacagaag tggctcttat cattgtgagt gctatgaagg ttataccttg 1080
aatgaagaca ggaaaacttg ttcagctcaa gataaatgtg ctttgggtac ccatgggtgt 1140
cagcacattt gtgtgaatga cagaacaggg tcccatcatt gtgaatgcta tgagggctac 1200
actctgaatg cagataaaaa aacatgttca gtccgtgaca agtgtgccct aggctctcat 1260
ggttgccagc acatttgtgt gagtgatggg gccgcatcct accactgtga ttgctatcct 1320
ggctacacct taaatgagga caagaaaaca tgttcagcca ctgaggaagc acgaagactt 1380
gtttccactg aagatgcttg tggatgtgaa gctacactgg cattccagga caaggtcagc 1440
tcgtatcttc aaagactgaa cactaaactt gatgacattt tggagaagtt gaaaataaat 1500
gaatatggac aaatacatcg ttaaattgct ccaatttctc acctgaaaat gtggacagct 1560
tggtgtactt aatactcatg cattcttttg cacacctgtt attgccaatg ttcctgctaa 1620
taatttgcca ttatctgtat taatgcttga atattactgg ataaattgta tgaagatctt 1680
ctgcagaatc agcatgattt ttccaaggaa atacatatgc agatacttat taagagcaaa 1740
ctttagtgtc tctaagttat gactgtgaaa tgattggtag gaaatagaat gaaaagttta 1800
gtgtttcttt atctactaat tgagccattt aatttttaaa tgtttatatt agataaccat 1860
attcacaatg gaaactttag gtctagtttc ttttgatagt atttataata taaatcaatc 1920
ttattactga gagtgcaaat tgtacaaggt atttacacat acaacttcat ataactgaga 1980
tgaatgtaat tttgaactgt ttaacacttt ttgttttttg cttattttgt tggagtatta 2040
ttgaagatgt gatcaataga ttgtaataca catatctaaa aatagttaac acagatcaag 2100
tgaacattac attgccattt ttaattcatt ctggtctttg aaagaaatgt actactaaag 2160
agcactagtt gtgaatttag ggtgttaaac tttttaccaa gtacaaaaat cccaaattca 2220
ctttattatt ttgcttcagg atccaagtga caaagttata tatttataaa attgctataa 2280
atcgacaaaa tctaatgttg tctttttaat gttagtgatc cacctgcctc agcctcccaa 2340
agtgctggga ttacaggctt gaaagtctaa cttttttta cttatatatt tgatacatat 2400
aattcttttg gctttgaaac ttgcaacttt gagaacaaaa cagtccttta aattttgcac 2460
tgctcaattc tgtttttcgt ttgcattgtc tttaatataa taaaagttat tacctttaca 2520
tattatcatg tctatttttg atgactcatc aattttgtct attaaagata tttctttaaa 2580
ttaaaaaaaa aaaaaaaaa 2599

<210> 35
<211> 3060
<212> DNA
<213> Human

<400> 35
tccggaagga ggcgaaccct gaggcgggcc cggcaagcct tccctgcggc cggcagagcc 60

caacgactag tgggactccg cgggggcggg ggtagctgga gcctggctct ggcctggcag 120

gagccgagct tgttccggaa gaagccgagc ggacgggggc cagcctcagc gtcccgggag 180

tgaggcgata gctgcggcgg cgacagcgcg ggccgggatg aaccgcgacg gctgaggcag 240

cggaggtgcc ggctgcgcgg gccccagtga gactccctcg aagcggcagc ccaccgttcg 300

gggctttgcc tcgagccgag ccctgccccc gcgagcctcc cggacccctt tgtgcggccg 360

gaggcggcgg cgggaacggc catggcggcc aacatgtacc gggtgggaga ttacgtctat 420

tttgagaact cttccagcaa tccttacctg gttagacgga ttgaggagct caacaagact 480

gcaaatggaa atgtggaggc aaaggttgtc tgtcttttcc ggcgcaggga catttctagt 540

agcctcaaca gcctggctga tagtaatgcc agggagtttg aagaggaatc aaagcagcca 600

ggggtgtctg agcagcagcg ccatcaactg aagcaccggg aactttttct ttctcggcaa 660

tttgaatcat taccagccac ccacatacgg gggaaatgca gtgtgaccct cttgaatgag 720

acagatatct tgagccagta cctggaaaag gaggactgct ttttttactc actggtgttt 780

gaccccgtgc agaagacact tctcgctgat cagggcgaga ttagagttgg ttgcaaatac 840

caagctgaga tcccagatcg cctagtagag ggagaatctg ataatcggaa ccagcagaag 900

atggagatga aggtctggga cccagacaac cctctcacag accggcagat cgaccagttt 960

cttgtggtgg cccgagctgt gggaaccttt gcaagagccc tagattgtag cagctccatt 1020

cggcagccaa gcttgcacat gagtgcagct gctgcctccc gagatatcac tctgtttcac 1080

gccatggata ccttgcaaag gaacggctac gacctggcta aggccatgtc gaccctggta 1140

ccccagggag gcccggtgct gtgtcgggat gagatggagg aatggtcagc ctcagaggcc 1200

atgctatttg aggaggccct agagaagtat gggaaggact tcaatgatat tcgccaggat 1260

tttctaccct ggaagtcact tgccagcata gtccagtttt attacatgtg gaaaaccaca 1320

gaccggtata ttcagcagaa aaggttgaaa gctgctgaag cagacagcaa actgaaacag 1380

gtctacattc ccacctacac taagccaaac cctaaccaga tcatttctgt gggttcaaaa 1440

cctggcatga atggggctgg atttcagaag ggcctgactt gtgagagttg ccacaccaca 1500

cagtctgctc agtggtatgc ctggggccca cctaacatgc agtgccgcct ctgtgcttcc 1560

tgttggatct actggaagaa gtatgggggа ctgaagaccc caactcagct tgagggggcc 1620

actcggggca ccacggagcc acactcaagg ggtcatttat ccagacctga agctcaaagt 1680

ctctctcctt acacaaccag cgccaacagg gccaagctac tggctaagaa cagacaaact 1740

ttcctgcttc agaccacaaa gctgacccgt cttgccagac gcatgtgcag ggacctatta 1800

cagccaagga gggccgcccg acggccttat gctcctatca atgccaatgc catcaaagca 1860

gagtgctcca ttcgacttcc taaggccgcc aagactccat tgaagattca ccctctggtg 1920

cggctgcccc tggcaactat cgtcaaagat ctggtggccc aggcacccct gaaaccaaaa 1980

acacctcggg gtaccaagac accgatcaac agaaaccagc tgtcccagaa ccggggactg 2040

gggggcatta tggtgaaacg ggcctatgag actatggcag gggcaggggt tcctttctct 2100

gccaatggaa ggcctctggc ttcagggatt cgttcaagct cacagccagc agccaagcgt 2160

cagaaactaa acccagctga tgcccccaat cctgtggtgt ttgtggccac aaaggatacc 2220

agggccctac ggaaggctct gacccatctg gaaatgcggc gagctgctcg ccgacccaac 2280

ttgcccctga aggtgaagcc aacgctgatt gcagtgcggc cccctgtccc tctacctgca 2340

ccctcacatc ctgccagcac caatgagcct attgtcctgg aggactgagc acctgtgggg 2400

aagggaggtg ggctgagagg tagagggtgg atgcccaggg cacccaaacc tcccttccct 2460

ttcgtgtcga agggagtgag gagtgaatta aggaagagag caagtgagtg tgtgtccctg 2520

gaggggttgg gcgccctctg gtgttaccac ctcgagactt gtctcatgcc tccatgcttg 2580

ccgatggagg acagactgca ggaacttggc ccatgtggga acctagcctg ttttgggggg 2640

taggacccac agatgtcttg gacagttttg gggggagggt tttttaattt tttaaaagtt 2700

ttgcctccct ttgtgaaagg ggatggggag gggaagagta aacagataac aggtggtggt 2760

acctggttgg gggagggggg cgtgcactgc catgtctttt tttttttttt tttttttttt 2820

tttcctaatt gggggtttct ctttctgtcc ggtgtccgga ctttcctaat tggagtttga 2880

ggcccctaag ctggcatcaa ccccaggcca cgctcgctct ttccttccct cccctccccc 2940

tctgcctttt gtacgccagt tctcagaaat aaagatcttt tgtccgtttt tttaacctcg 3000

gattctgtaa ttggttctta tagtaacaaa taaaaagctg ttttcttcag cttctcctgg 3060

<210> 36
<211> 15720
<212> DNA
<213> Human

<400> 36
caacccacac cgcccctgcc agccaccatg gggctgccac tagcccgcct ggcggctgtg 60

tgcctggccc tgtctttggc agggggctcg gagctccaga cagagggcag aacccgatac 120

cacggccgca acgtctgcag cacctggggc aacttccact acaagacctt cgacggggac 180
gtcttccgct tccccggcct ctgcgactac aacttcgcct ccgactgccg aggctcctac 240
aaggaatttg ctgtgcacct gaagcggggt ccgggccagg ctgaggcccc cgccggggtg 300
gagtccatcc tgctgaccat caaggatgac accatctacc tcacccgcca cctggctgtg 360
cttaacgggg ccgtggtcag cacccccgcac tacagccccg ggctgctcat tgagaagagc 420
gatgcctaca ccaaagtcta ctcccgcgcc ggcctcaccc tcatgtggaa ccgggaggat 480
gcactcatgc tggagctgga cactaagttc cggaaccaca cctgtggcct ctgcggggac 540
tacaacggcc tgcagagcta ttcagaattc ctctctgacg gcgtgctctt cagtcccctg 600
gagtttggga acatgcagaa gatcaaccag cccgatgtgg tgtgtgagga tcccgaggag 660
gaggtggccc ccgcatcctg ctccgagcac cgcgccgagt gtgagaggct gctgaccgcc 720
gaggccttcg cggactgtca ggacctggtg ccgctggagc cgtatctgcg cgcctgccag 780
caggaccgct gccggtgccc gggcggtgac acctgcgtct gcagcaccgt ggccgagttc 840
tcccgccagt gctcccacgc cggcggccgg cccgggaact ggaggaccgc cacgctctgc 900
cccaagacct gccccgggaa cctggtgtac ctggagagcg gctcgccctg catggacacc 960
tgctcacacc tggaggtgag cagcctgtgc gaggagcacc gcatggacgg ctgtttctgc 1020
ccagaaggca ccgtatatga cgacatcggg gacagtggct gcgttcctgt gagccagtgc 1080
cactgcaggc tgcacggaca cctgtacaca ccgggccagg agatcaccaa tgactgcgag 1140
cagtgtgtct gtaacgctgg ccgctgggtg tgcaaagacc tgccctgccc cggcacctgt 1200
gccctggaag gcggctccca catcaccacc ttcgatggga agacgtacac cttccacggg 1260
gactgctact atgtcctggc caagggtgac cacaacgatt cctacgctct cctgggcgag 1320
ctggcccccct gtggctccac agacaagcag acctgcctga agacggtggt gctgctggct 1380
gacaagaaga agaatgcggt ggtcttcaag tccgatggca gtgtactgct caaccagctg 1440
caggtgaacc tgccccacgt gaccgcgagc ttctctgtct tccgcccgtc ttcctaccac 1500
atcatggtga gcatggccat tggcgtccgg ctgcaggtgc agctggcccc agtcatgcaa 1560
ctctttgtga cactggacca ggcctcccag gggcaggtgc agggcctctg cgggaacttc 1620
aacggcctgg aaggtgacga cttcaagacg gccagcgggc tggtggaggc cacgggggcc 1680
ggctttgcca acacctggaa ggcacagtca acctgccatg acaagctgga ctggttggac 1740
gatccctgct ccctgaacat cgagagcgcc aactacgccg agcactggtg ctccctcctg 1800
aagaagacag agaccccctt tggcaggtgc cactcggctg tggaccctgc tgagtattac 1860

aagaggtgca aatatgacac gtgtaactgt cagaacaatg aggactgcct gtgcgccgcc 1920
ctgtcctcct acgcgcgcgc ctgcaccgcc aagggcgtca tgctgtgggg ctggcgggag 1980
catgtctgca acaaggatgt gggctcctgc cccaactcgc aggtcttcct gtacaacctg 2040
accacctgcc agcagacctg ccgctccctc tccgaggccg acagccactg tctcgagggc 2100
tttgcgcctg tggacggctg cggctgccct gaccacacct tcctggacga gaagggccgc 2160
tgcgtacccc tggccaagtg ctcctgttac caccgcggtc tctacctgga ggcgggggat 2220
gtggtcgtca ggcaggaaga acgatgtgtg tgccgggatg ggcggctgca ctgtaggcag 2280
atccggctga tcggccagag ctgcacggcc ccaaagatcc acatggactg cagcaacctg 2340
actgcactgg ccacctcgaa gccccgagcc ctcagctgcc agacgctggc cgccggctat 2400
taccacacag agtgtgtcag tggctgtgtg tgccccgacg ggctgatgga tgacggccgg 2460
ggtggctgcg tggtggagaa ggaatgccct tgcgtccata acaacgacct gtattcttcc 2520
ggcgccaaga tcaaggtgga ctgcaatacc tgcacctgca agagaggacg ctgggtgtgc 2580
acccaggctg tgtgccatgg cacctgctcc atttacggga gtggccacta catcaccttt 2640
gatgggaagt actacgactt tgacggacac tgctcctacg tggctgttca ggactactgc 2700
ggccagaact cctcactggg ctcattcagc atcatcaccg agaacgtccc ctgtggcact 2760
acgggcgtca cctgctccaa ggccatcaag atcttcatgg ggaggacgga gctgaagttg 2820
gaagacaagc accgtgtggt gatccagcgt gatgagggtc accacgtggc ctacaccacg 2880
cgggaggtgg gccagtacct ggtggtggag tccagcacgg gcatcatcgt catctgggac 2940
aagaggacca ccgtgttcat caagctggct ccctcctaca agggcaccgt gtgtggcctg 3000
tgtgggaact ttgaccaccg ctccaacaac gacttcacca cgcgggacca catggtggtg 3060
agcagcgagc tggacttcgg gaacagctgg aaggaggccc ccacctgccc agatgtgagc 3120
accaaccccg agccctgcag cctgaacccg caccgccgct cctgggccga gaagcagtgc 3180
agcatcctca aaagcagcgt gttcagcatc tgccacagca aggtggaccc caagcccttc 3240
tacgaggcct gtgtgcacga ctcgtgctcc tgtgacacgg gtggggactg tgagtgcttc 3300
tgctctgccg tggcctccta cgcccaggag tgtaccaaag agggggcctg cgtgttctgg 3360
aggacgccgg acctgtgccc catattctgc gactactaca accctccgca tgagtgtgag 3420
tggcactatg agccatgtgg gaaccggagc ttcgagacct gcaggaccat caacggcatc 3480
cactccaaca tctccgtgtc ctacctggag ggctgctacc cccggtgccc caaggacagg 3540
cccatctatg aggaggatct gaagaagtgt gtcactgcag acaagtgtgg ctgctatgtc 3600
gaggacaccc actacccacc tggagcatcg gttcccaccg aggagacctg caagtcctgc 3660

gtgtgtacca actcctccca agtcgtctgc aggccggagg aaggaaagat tcttaaccag 3720
acccaggatg gcgccttctg ctactgggag atctgtggcc ccaacgggac ggtggagaag 3780
cacttcaaca tctgttccat tacgacacgc ccgtccaccc tgaccacctt caccaccatc 3840
accctcccca ccacccccac ctccttcacc actaccacca ccaccaccac cccgacctcc 3900
agcacagttt tatcaacaac tccgaagctg tgctgcctct ggtctgactg gatcaatgag 3960
gaccacccca gcagtggcag cgacgacggt gaccgagaac catttgatgg ggtctgcggg 4020
gcccctgagg acatcgagtg caggtcggtc aaggatcccc acctcagctt ggagcagcat 4080
ggccagaagg tgcagtgtga tgtctctgtt gggttcattt gcaagaatga agaccagttt 4140
ggaaatggac catttggact gtgttacgac tacaagatac gtgtcaattg ttgctggccc 4200
atggataagt gtatcaccac tcccagccct ccaactacca ctcccagccc tccaccaacc 4260
acgacgacca ccccttccacc aaccaccacc cccagccctc caaccaccac cacaaccacc 4320
cctccaccaa ccaccacccc cagccctcca ataaccacca cgaccacccc tctaccaacc 4380
accactccca gccctccaat aagcaccaca accacccctc caccaaccac cactcccagc 4440
cctccaacca ccactcccag ccctccaacc accactccca gccctccaac aaccaccaca 4500
accacccctc caccaaccac cactcccagc cctccaatga ctacgcccat cactccacca 4560
gccagcacta ccacccttcc accaaccacc actcccagcc ctccaacaac caccacaacc 4620
acccctccac caaccaccac tcccagtcct ccaacgacta cgcccatcac tccaccaacc 4680
agcactacta cccttccacc aaccaccact cccagccctc caccaaccac cacaaccacc 4740
cctccaccaa ccaccactcc cagccctcca acaaccacca ctcccagtcc tccaacaatc 4800
accacaacca cccctccacc aaccaccact cccagccctc caacaacgac cacaaccacc 4860
cctccaccaa ccaccactcc cagccctcca acgactacac ccatcactcc accaaccagc 4920
actaccaccc ttccaccaac caccactccc agccctccac caaccaccac aaccacccct 4980
ccaccaacca ccactcccag ccctccaaca accaccactc ccagccctcc aataaccacc 5040
acaaccaccc ctccaccaac caccactccc agctctccaa taaccaccac tcccagccct 5100
ccaacaacca ccatgaccac cccttcacca accaccaccc ccagctctcc aataaccacc 5160
acaaccaccc cttcctcaac taccactccc agccctccac caaccaccat gaccacccct 5220
tcaccaacca ccactcccag ccctccaaca accaccatga ccacccttcc accaaccacc 5280
acttccagcc ctctaacaac tactcctcta cctccatcaa taactcctcc tacattttca 5340
ccattctcaa cgacaacccc tactacccca tgcgtgcctc tctgcaattg gactggctgg 5400

ctggattctg gaaaacccaa ctttcacaaa ccaggtggag acacagaatt gattggagac 5460
gtctgtggac caggctgggc agctaacatc tcttgcagag ccaccatgta tcctgatgtt 5520
cccattggac agcttggaca aacagtggtg tgtgatgtct ctgtggggct gatatgcaaa 5580
aatgaagacc aaaagccagg tggggtcatc cctatggcct tctgcctcaa ctacgagatc 5640
aacgttcagt gctgtgagtg tgtcacccaa cccaccacca tgacaaccac caccacagag 5700
aacccaactc cgccaaccac gacacccatc accaccacca ctacggtgac cccaacccca 5760
acacccaccg gcacacagac cccaaccacg acacccatca ccaccaccac tacggtgacc 5820
ccaaccccaa cacccaccgg cacacagacc ccaaccacga cacccatcac caccaccact 5880
acggtgaccc caaccccaac acccaccggc acacagaccc caaccacgac acccatcacc 5940
accaccacta cggtgacccc aaccccaaca cccaccggca cacagacccc aaccacgaca 6000
cccatcacca ccaccactac ggtgacccca accccaacac ccaccggcac acagacccca 6060
accacgacac ccatcaccac caccactacg gtgaccccaa ccccaacacc caccggcaca 6120
cagaccccaa ccacgacacc catcaccacc accactacgg tgaccccaac cccaacaccc 6180
accggcacac agaccccaac cacgacaccc atcaccacca ccactacggt gaccccaacc 6240
ccaacaccca ccggcacaca gaccccaacc acgacaccca tcaccaccac cactacggtg 6300
accccaaccc caacacccac cggcacacag accccaacca cgacacccat caccaccacc 6360
actacggtga ccccaacccc aacacccacc ggcacacaga ccccaaccac gacacccatc 6420
accaccacca ctacggtgac cccaacccca acacccaccg gcacacagac cccaaccacg 6480
acacccatca ccaccaccac tacggtgacc ccaaccccaa cacccaccgg cacacagacc 6540
ccaaccacga cacccatcac caccaccact acggtgaccc caaccccaac acccaccggc 6600
acacagaccc caaccacgac acccatcacc accaccacta cggtgacccc aaccccaaca 6660
cccaccggca cacagacccc aaccacgaca cccatcacca ccaccactac ggtgacccca 6720
accccaacac ccaccggcac acagacccca accacgacac ccatcaccac caccactacg 6780
gtgaccccaa ccccaacacc caccggcaca cagaccccaa ccacgacacc catcaccacc 6840
accactacgg tgaccccaac cccaacaccc accggcacac agaccccaac cacgacaccc 6900
atcaccacca ccactacggt gaccccaacc ccaacaccca ccggcacaca gaccccaacc 6960
acgacaccca tcaccaccac cactacggtg accccaaccc caacacccac cggcacacag 7020
accccaacca cgacacccat caccaccacc actacggtga ccccaacccc aacacccacc 7080
ggcacacaga ccccaaccac gacacccatc accaccacca ctacggtgac cccaacccca 7140
acacccaccg gcacacagac cccaaccacg acacccatca ccaccaccac tacggtgacc 7200

ccaaccccaa cacccaccgg cacacagacc ccaaccacga cacccatcac caccaccact 7260

acggtgaccc caaccccaac acccaccggc acacagaccc caaccacgac acccatcacc 7320

accaccacta cggtgacccc aaccccaaca cccaccggca cacagacccc aaccacgaca 7380

cccatcacca ccaccactac ggtgacccca accccaacac ccaccggcac acagacccca 7440

accacgacac ccatcaccac caccactacg gtgaccccaa ccccaacacc caccggcaca 7500

cagaccccaa ccacgacacc catcaccacc accactacgg tgaccccaac cccaacaccc 7560

accggcacac agaccccaac cacgacaccc atcaccacca ccactacggt gaccccaacc 7620

ccaacaccca ccggcacaca gaccccaacc acgacaccca tcaccaccac cactacggtg 7680

accccaaccc caacacccac cggcacacag accccaacca cgacacccat caccaccacc 7740

actacggtga ccccaacccc aacacccacc ggcacacaga ccccaaccac gacacccatc 7800

accaccacca ctacggtgac cccaacccca acacccaccg gcacacagac cccaaccacg 7860

acacccatca ccaccaccac tacggtgacc ccaaccccaa cacccaccgg cacacagacc 7920

ccaaccacga cacccatcac caccaccact acggtgaccc caaccccaac acccaccggc 7980

acacagaccc caaccacgac acccatcacc accaccacta cggtgacccc aaccccaaca 8040

cccaccggca cacagacccc aaccacgaca cccatcacca ccaccactac ggtgacccca 8100

accccaacac ccaccggcac acagacccca accacgacac ccatcaccac caccactacg 8160

gtgaccccaa ccccaacacc caccggcaca cagaccccaa ccacgacacc catcaccacc 8220

accactacgg tgaccccaac cccaacaccc accggcacac agaccccaac cacgacaccc 8280

atcaccacca ccactacggt gaccccaacc ccaacaccca ccggcacaca gaccccaacc 8340

acgacaccca tcaccaccac cactacggtg accccaaccc caacacccac cggcacacag 8400

accccaacca cgacacccat caccaccacc actacggtga ccccaacccc aacacccacc 8460

ggcacacaga ccccaaccac gacacccatc accaccacca ctacggtgac cccaacccca 8520

acacccaccg gcacacagac cccaaccacg acacccatca ccaccaccac tacggtgacc 8580

ccaaccccaa cacccaccgg cacacagacc ccaaccacga cacccatcac caccaccact 8640

acggtgaccc caaccccaac acccaccggc acacagaccc caaccacgac acccatcacc 8700

accaccacta cggtgacccc aaccccaaca cccaccggca cacagacccc aaccacgaca 8760

cccatcacca ccaccactac ggtgacccca accccaacac ccaccggcac acagacccca 8820

accacgacac ccatcaccac caccactacg gtgaccccaa ccccaacacc caccggcaca 8880

cagaccccaa ccacgacacc catcaccacc accactacgg tgaccccaac cccaacaccc 8940

accggcacac agaccccaac cacgacaccc atcaccacca ccactacggt gaccccaacc 9000
ccaacaccca ccggcacaca gaccccaacc acgacaccca tcaccaccac cactacggtg 9060
accccaaccc caacacccac cggcacacag accccaacca cgacacccat caccaccacc 9120
actacggtga ccccaacccc aacacccacc ggcacacaga ccccaaccac gacacccatc 9180
accaccacca ctacggtgac cccaacccca acacccaccg gcacacagac cccaaccacg 9240
acacccatca ccaccaccac tacggtgacc ccaaccccaa cacccaccgg cacacagacc 9300
ccaaccacga cacccatcac caccaccact acggtgaccc caaccccaac acccaccggc 9360
acacagaccc caaccacgac acccatcacc accaccacta cggtgacccc aaccccaaca 9420
cccaccggca cacagacccc aaccacgaca cccatcacca ccaccactac ggtgacccca 9480
accccaacac ccaccggcac acagacccca accacgacac ccatcaccac caccactacg 9540
gtgaccccaa ccccaacacc caccggcaca cagaccccaa ccacgacacc catcaccacc 9600
accactacgg tgaccccaac cccaacaccc accggcacac agaccccaac cacgacaccc 9660
atcaccacca ccactacggt gaccccaacc ccaacaccca ccggcacaca gaccccaacc 9720
acgacaccca tcaccaccac cactacggtg accccaaccc caacacccac cggcacacag 9780
accccaacca cgacacccat caccaccacc actacggtga ccccaacccc aacacccacc 9840
ggcacacaga ccccaaccac gacacccatc accaccacca ctacggtgac cccaacccca 9900
acacccaccg gcacacagac cccaaccacg acacccatca ccaccaccac tacggtgacc 9960
ccaaccccaa cacccaccgg cacacagacc ccaaccacga cacccatcac caccaccact 10020
acggtgaccc caaccccaac acccaccggc acacagaccc caaccacgac acccatcacc 10080
accaccacta cggtgacccc aaccccaaca cccaccggca cacagacccc aaccacgaca 10140
cccatcacca ccaccactac ggtgacccca accccaacac ccaccggcac acagacccca 10200
accacgacac ccatcaccac caccactacg gtgaccccaa ccccaacacc caccggcaca 10260
cagaccccaa ccacgacacc catcaccacc accactacgg tgaccccaac cccaacaccc 10320
accggcacac agaccccaac cacgacaccc atcaccacca ccactacggt gaccccaacc 10380
ccaacaccca ccggcacaca gaccccaacc acgacaccca tcaccaccac cactacggtg 10440
accccaaccc caacacccac cggcacacag accccaacca cgacacccat caccaccacc 10500
actacggtga ccccaacccc aacacccacc ggcacacaga ccccaaccac gacacccatc 10560
accaccacca ctacggtgac cccaacccca acacccaccg gcacacagac cccaaccacg 10620
acacccatca ccaccaccac tacggtgacc ccaaccccaa cacccaccgg cacacagacc 10680
ccaaccacga cacccatcac caccaccact acggtgaccc caaccccaac acccaccggc 10740

acacagaccc caaccacgac acccatcacc accaccacta cggtgacccc aaccccaaca 10800
cccaccggca cacagacccc aaccacgaca cccatcacca ccaccactac ggtgacccca 10860
accccaacac ccaccggcac acagacccca accacgacac ccatcaccac caccactacg 10920
gtgaccccaa ccccaacacc caccggcaca cagaccccaa ccacgacacc catcaccacc 10980
accactacgg tgaccccaac cccaacaccc accggcacac agaccccaac cacgacaccc 11040
atcaccacca ccactacggt gaccccaacc ccaacaccca ccggcacaca gaccccaacc 11100
acgacaccca tcaccaccac cactacggtg accccaaccc caacacccac cggcacacag 11160
accccaacca cgacacccat caccaccacc actacggtga ccccaacccc aacacccacc 11220
ggcacacaga ccccaaccac gacacccatc accaccacca ctacggtgac cccaacccca 11280
acacccaccg gcacacagac cccaaccacg acacccatca ccaccaccac tacggtgacc 11340
ccaaccccaa cacccaccgg cacacagacc ccaaccacga cacccatcac caccaccact 11400
acggtgaccc caaccccaac acccaccggc acacagaccc caaccacgac acccatcacc 11460
accaccacta cggtgacccc aaccccaaca cccaccggca cacagacccc aaccacgaca 11520
cccatcacca ccaccactac ggtgacccca accccaacac ccaccggcac acagacccca 11580
accacgacac ccatcaccac caccactacg gtgaccccaa ccccaacacc caccggcaca 11640
cagaccccaa ccacgacacc catcaccacc accactacgg tgaccccaac cccaacaccc 11700
accggcacac agaccccaac cacgacaccc atcaccacca ccactacggt gaccccaacc 11760
ccaacaccca ccggcacaca gaccccaacc acgacaccca tcaccaccac cactacggtg 11820
accccaaccc caacacccac cggcacacag accccaacca cgacacccat caccaccacc 11880
actacggtga ccccaacccc aacacccacc ggcacacaga ccccaaccac gacacccatc 11940
accaccacca ctacggtgac cccaacccca acacccaccg gcacacagac cccaaccacg 12000
acacccatca ccaccaccac tacggtgacc ccaaccccaa cacccaccgg cacacagacc 12060
ccaaccacga cacccatcac caccaccact acggtgaccc caaccccaac acccaccggc 12120
acacagaccc caaccacgac acccatcacc accaccacta cggtgacccc aaccccaaca 12180
cccaccggca cacagacccc aaccacgaca cccatcacca ccaccactac ggtgacccca 12240
accccaacac ccaccggcac acagacccca accacgacac ccatcaccac caccactacg 12300
gtgaccccaa ccccaacacc caccggcaca cagaccccaa ccacgacacc catcaccacc 12360
accactacgg tgaccccaac cccaacaccc accggcacac agaccccaac cacgacaccc 12420
atcaccacca ccactacggt gaccccaacc ccaacaccca ccggcacaca gaccccaacc 12480

acgacaccca tcaccaccac cactacggtg accccaaccc caacacccac cggcacacag 12540
accccaacca cgacacccat caccaccacc actacggtga ccccaacccc aacacccacc 12600
ggcacacaga ccgggccccc cacccacaca agcacagcac cgattgctga gttgaccaca 12660
tccaatcctc cgcctgagtc ctcaacccct cagacctctc ggtccacctc ttcccctctc 12720
acggagtcaa ccacccttct gagtacccta ccacctgcca ttgagatgac cagcacggcc 12780
ccaccctcca cacccacggc acccacgacc acgagcggag gccacacact gtctccaccg 12840
cccagcacca ccacgtcccc tccaggcacc cccactcgcg gtaccacgac cgggtcatct 12900
tcagccccca cccccagcac tgtgcagacg accaccacca gtgcctggac cccaacgccg 12960
accccactct ccacacccag catcatcagg accacaggcc tgaggcccta cccttcctct 13020
gtgcttatct gctgtgtcct gaacgacacc tactacgcac caggtgagga ggtgtacaac 13080
ggcacatacg gagacacctg ttatttcgtc aactgctcac tgagctgtac gttggagttc 13140
tataactggt cctgcccatc cacgccctcc ccaacaccca cgccctccaa gtcgacgccc 13200
acgccttcca agccatcgtc cacgccctcc aagccgacgc ccggcaccaa gcccccccgag 13260
tgcccagact ttgatcctcc cagacaggag aacgagactt ggtggctgtg cgactgcttc 13320
atggccacgt gcaagtacaa caacacggtg gagatcgtga aggtggagtg tgagccgccg 13380
cccatgccca cctgctccaa cggcctccaa cccgtgcgcg tcgaggaccc cgacggctgc 13440
tgctggcact gggagtgcga ctgctactgc acgggctggg gcgacccgca ctatgtcacc 13500
ttcgacggac tctactacag ctaccagggc aactgcacct acgtgctggt ggaggagatc 13560
agcccctccg tggacaactt cggagtttac atcgacaact accactgcga tcccaacgac 13620
aaggtgtcct gtccccgcac cctcatcgtg cgccacgaga cccaggaggt gctgatcaag 13680
accgtgcata tgatgcccat gcaggtgcag gtgcaggtga acaggcaggc ggtggcactg 13740
ccctacaaga agtacgggct ggaggtgtac cagtctggca tcaactacgt ggtggacatc 13800
cccgagctgg gtgtcctcgt ctcctacaat ggcctgtcct tctccgtcag gctgccctac 13860
caccggtttg gcaacaacac caagggccag tgtggcacct gcaccaacac cacctccgac 13920
gactgcattc tgcccagcgg ggagatcgtc tccaactgtg aggctgcggc tgaccagtgg 13980
ctggtgaacg accccctccaa gccacactgc ccccacagca gctccacgac caagcgcccg 14040
gccgtcactg tgcccggggg cggtaaaacg accccacaca aggactgcac cccatctccc 14100
ctctgccagc tcatcaagga cagcctgttt gcccagtgcc acgcactggt gcccccgcag 14160
cactactacg atgcctgcgt gttcgacagc tgcttcatgc cgggctcgag cctggagtgc 14220
gccagtctgc aggcctacgc agccctctgt gcccagcaga acatctgcct cgactggcgg 14280

aaccacacgc atggggcctg cttggtggag tgcccatctc acagggagta ccaggcctgt 14340

ggccctgcag aagagcccac gtgcaaatcc agctcctccc agcagaacaa cacagtcctg 14400

gtggaaggct gcttctgtcc tgagggcacc atgaactacg ctcctggctt tgatgtctgc 14460

gtgaagacct gcggctgtgt gggacctgac aatgtgccca gagagtttgg ggagcacttc 14520

gagttcgact gcaagaactg tgtctgcctg gagggtggaa gtggcatcat ctgccaaccc 14580

aagaggtgca gccagaagcc cgttacccac tgcgtggaag acggcaccta cctcgccacg 14640

gaggtcaacc ctgccgacac ctgctgcaac attaccgtct gcaagtgcaa caccagcctg 14700

tgcaaagaga agccctccgt gtgcccgctg ggattcgaag tgaagagcaa gatggtgcct 14760

ggaaggtgct gtcccttcta ctggtgtgag tccaaggggg tgtgtgttca cgggaatgct 14820

gagtaccagc ccggttctcc agtttattcc tccaagtgcc aggactgcgt gtgcacggac 14880

aaggtggaca acaacaccct gctcaacgtc atcgcctgca cccacgtgcc ctgcaacacc 14940

tcctgcagcc ctggcttcga actcatggag gcccccgggg agtgctgtaa gaagtgtgaa 15000

cagacgcact gtatcatcaa acggcccgac aaccagcacg tcatcctgaa gcccggggac 15060

ttcaagagcg acccgaagaa caactgcaca ttcttcagct gcgtgaagat ccacaaccag 15120

ctcatctcgt ccgtctccaa catcacctgc cccaactttg atgccagcat ttgcatcccg 15180

ggctccatca cattcatgcc caatggatgc tgcaagacct gcacccctcg caatgagacc 15240

agggtgccct gctccaccgt ccccgtcacc acggaggttt cgtacgccgg ctgcaccaag 15300

accgtcctca tgaatcattg ctccgggtcc tgcgggacat ttgtcatgta ctcggccaag 15360

gcccaggccc tggaccacag ctgctcctgc tgcaaagagg agaaaaccag ccagcgtgag 15420

gtggtcctga gctgccccaa tggcggctcg ctgacacaca cctacaccca catcgagagc 15480

tgccagtgcc aggacaccgt ctgcgggctc cccaccggca cctcccgccg ggcccggcgc 15540

tcccctaggc atctggggag cgggtgagcg gggtgggcac agcccccttc actgccctcg 15600

acagctttac ctcccccgga ccctctgagc ctcctaagct cggcttcctc tcttcagata 15660

tttattgtct gagtctttgt tcagtccttg ctttccaata ataaactcag gggacatgc 15720

<210> 37
<211> 3941
<212> DNA
<213> Human

<400> 37
accatctact ccacagtcag ctcatccaca actgccatca cctcaccttt cactaccgca 60

gagactgggg tgacttccac accttcatcc ccatcttctc tgagtacaga catcccgacc 120

acatccctaa gaactctcac cccattatct ttgagcacca gcacttcatt gactacaacc 180
acagaccttc cctctatacc cactgatatc agtagcttac caacccccaat acacatcatt 240
tcatcttctc cctccatcca aagtacagaa acctcatccc ttgtgggcac cacctctccc 300
accatgtcca ctgtgagagc gaccctcaga agtactgaga acaccccaat cagttccttt 360
agcacaagta ttgttgttac acctgaaacc ccaacaacac aggcccctcc tgtactgatg 420
tctgccactg ggacccaaac atcccctgta cctactactg tcacctttgg aagtatggat 480
tcctctacgt ccactcttca tactcttact ccatcaacag ccttgagcaa gatcatgtca 540
acatcacagt ttcctattcc tagcacacat tcctccaccc ttcaaacaac tccttcaatc 600
ccctctttgc aaacttcact cacatctaca agtgagttca ctacagaatc tttcactagg 660
ggaagtacgt ctacaaatgc aatcttgact tcttttagta ccatcatctg gtcctcaaca 720
cccactatta tcatgtcctc ttctccatct tctgccagca taactccagt gttcgctact 780
accattcatt ctgttccttc gtcaccatac attttcagta cagaaaatgt gggctccgct 840
tctatcacag cctttcctag tctctcttcc tcttcaacta ccagcacttc tccaaccagc 900
tcctctctga ccacagctct cactgaaata accccctttt cttatatttc ccttccctcc 960
accacaccct gtccaggaac tataacaatt accatagtcc ctgcctcccc cactgatcca 1020
tgtgttgaaa tggatcccag cactgaagct acttctcctc ccaccactcc attaacagtc 1080
tttcccttta ctactgaaat ggtcacctgt cctagctcca tcagtatgca aactactctt 1140
gctacacata tggacacttc ttccatgacg ccagaaagtg agtccagcat catacctaat 1200
gcttccagtt ccactggcac tgggactgta cccacaaaca cagttttcac aagtactcga 1260
ctgcccacca gtgagacctg gctgagcaac aactctgtga tccccacacc tcttcctggc 1320
gtctctacca tcccgctcac catgaaacca agcagtagcc tcccgaccat cctgaggact 1380
tcaagcaagt caacacaccc atccccaccc accgccagga cttcagagac atcagtggcc 1440
actacccaga ctcctaccac ccttacaacg cgcaggacaa ctcccatcac ttcttggatg 1500
accacacagt ccacgttgac caccactgca ggcacctgtg acaatggtgg cacctgggaa 1560
cagggccagt gtgcttgcct tccgggggttt tctggggacc gctgtcagct ccagaccaga 1620
tgccagaacg gggggccagtg ggatggcctc aagtgccagt gccccagcac cttctatggt 1680
tccagttgtg agtttgctgt ggaacaggtg gatctagatg tagtggagac cgaggtgggc 1740
atggaagtgt ctgtggatca gcagttctcg ccggacctca atgacaacac ttcccaggcc 1800
tacagggatt tcaacaagac cttctggaat cagatgcaga agatttttgc agacatgcag 1860

ggcttcacct tcaagggtgt ggagatcctg tccctgagga atggcagcat cgtggtggac 1920
tacctggtcc tgctggagat gcccttcagc cccagctgg agagcgagta tgagcaggtg 1980
aagaccacgc tgaaggaggg gctccagaac gccagccagg atgcgaacag ctgccaggac 2040
tcccagaccc tgtgttttaa gcctgactcc atcaaggtga acaacaacag caagacagag 2100
ctgaccccgg aagccatctg ccgccgcgcc gctcccacgg gctatgaaga gttctacttc 2160
cctctggtgg aggccacccg gctccgctgt gtcaccaaat gcacgtcggg cgtggacaac 2220
gccatcgact gtcaccaggg ccagtgcgtt ctagagacga gcggtcccgc gtgtcgctgc 2280
tactccaccg acacgcactg gttctctggc ccgcgctgcg aggtggccgt ccactggagg 2340
gcgctggtcg gggcctgac ggccggcgcc gcgctgctgg tgctgctgct gctggcgctg 2400
ggcgtccggg cggtgcgctc cggatggtgg ggcggccagc gccgaggccg gtcctgggac 2460
caggacagga aatggttcga gacctgggat gaggaagtcg tgggcacttt ttcaaactgg 2520
ggtttcgagg acgacggaac agacaaggat acaaatttcc atgtggcctt ggagaacgtg 2580
gacaccacta tgaaggtgca catcaagaga cccgagatga cctcgtcctc agtgtgagcc 2640
ctgcggggcc ccttcaccac cccctccgcc ctgccccgga cacaagggtc tgcattgcgt 2700
ccatttcaag aggtggcccc aggacgcggg cagcccaggc tcctgctgtt cttgggcaag 2760
atgagactgt tcccccaaat cccatccttc tccttccaac ttggctgaaa cccacctgga 2820
gacgcagttc acgtccaggc tcttccactg tggaatcttg ggcaagtcag taacgagcct 2880
cagtttcctc acctgcaaaa cgggtacagc attcctgtat gatagctcac gccgttgttg 2940
tgaaaaccac atagacttgg tcaattctcg gtcctactct gccctcccgt ctcagccctc 3000
gtgttgccat tgcctctctc ggatcctcca atcctcacgt ccttcacctg gtctctggcc 3060
ctggttctta ttttctctca attccctact gcctgtttct tactttgaac ctggaggcag 3120
cctgcagccc catcccatct cctgccctct cctgatctaa ctccctgctg catctcttgc 3180
tctcattcct tagacgtcct cccctttga ccccgttcct tcatccatcc tgcaccccag 3240
tcccccagcc ctaaatcctc cctcctctcc tcacatcctg gtccctagca aggtatagat 3300
agcctctgtg tcttaggata ccccgggtgc tgttccctcg gtcaccctgt tgcccagttc 3360
cccgtttctc ttgctctcat tccttgtatc ttctcccctt ctgagcccgt ccattcatcg 3420
gttctgcccc cgactccccc agccctaaat accccagctc ctaattcccc cctcaccccg 3480
ttgctcaatt ccccgtttct cttgctctca ttccttgtat cttctcccct tctgagcctg 3540
tccattcatc ggtggttctg cccctactcc cccagcccta aataccccag ctgctgttcc 3600
tccccatcac ccagccaccg gattctccat tcaccccttt ctctcacccc tggagccccg 3660

tgggtggggg cagggcatga gttccccagt ccccaaggaa aggcagcccc ctcagtctcc 3720

ctcctcctca ttcccttcca tctccctccc ctctgccttt taaacccatc ccctccgatt 3780

cccctcctcc cccctctctc cctggtgtca actcgattcc tgcggtaact ctgagccctg 3840

aaatcctcag tctccttggc ggggaagatt ggctttgggg acaggaagtc ggcacatctc 3900

caggtctcca tgtgcacaat atagagttta ttgtaaaaag c 3941

<210> 38
<211> 5992
<212> DNA
<213> Human

<400> 38
aaattgctgt gaccgcagca tctctaggaa gacgctttat tcctgaagga cactgactgt 60

cacttgggaa ccaagaagcc ctctgcagtc atgagctctg acgcagaaat ggccattttt 120

ggagaagcag ctccctacct ccggaaacca gagaaggaga gaatcgaggc tcaaaatcgt 180

ccattcgatt ccaagaaagc ctgctttgta gcggataata aggaaatgta tgtgaaaggc 240

atgatccaga ctagggaaaa tgacaaagtc atagtcaaga ccctcgatga ccggatgctc 300

actctgaaca atgaccaggt cttccccatg aaccctccca aatttgacaa gatcgaggac 360

atggccatga tgactcacct gcatgaacct gctgttctgt acaacctcaa agagcgctat 420

gcagcctgga tgatctacac ctactcaggc ctcttctgtg tcaccgtcaa cccctacaag 480

tggctgccgg tgtacaagcc cgaggtggtg gctgcctaca gaggcaaaaa gcgccaggag 540

gccccgcccc acatcttctc catctctgac aatgcctatc agttcatgct gactgatcga 600

gacaaccagt ctatcctcat caccggagaa tccggggctg ggaagactgt gaacaccaag 660

cgtgtcatcc agtattttgc aacaattgca gttaccgggg acaagaagaa ggagacacag 720

ccaggcaaaa tgcagggaac cctagaggat cagatcatcc aggccaaccc actgctggag 780

gcctttggaa atgccaagac tgtgaggaat gacaactcct caagatttgg gaagttcatt 840

cggattcatt ttggagccac aggaaagctg gcatcggcag acatcgaaac ttatctgtta 900

gaaaaatcca gagtgacgtt tcaattatcc agtgagagaa gctatcatat tttctaccaa 960

attatgtcaa acaagaagcc agaactaatt gacctgcttc tgatctccac caaccccttc 1020

gacttcccct tcgtgagcca aggagaggtc acggtagcca gtatcgatga cagtgaagaa 1080

ctgctggcga cagataatgc cattgacatc ctgggcttca gctcagagga gaaagtcggg 1140

atctacaaac tgacgggagc cgtgatgcat tatgggaaca tgaagttcaa gcagaagcag 1200

cgtgaggagc aggcggagcc agacggcacc gaagtggctg acaaagccgg atacctgatg 1260

ggactgaatt ctgcagaaat gctgaagggc ctgtgctgtc caagggtgaa ggttggcaat 1320
gaatatgtca ctaaagggca aaatgtccag caggtgacca attcggtggg tgctctggcc 1380
aaagccgtct acgagaagat gttcctgtgg atggtcaccc gcatcaacca gcagttggac 1440
accaagcagc ccaggcagta cttcatcggg gtcttggaca ttgctggctt tgagatcttt 1500
gatttcaaca gcctggagca gctgtgcatc aacttcacca atgagaaact gcaacagttt 1560
ttcaaccacc acatgttcgt gctggagcag gaagagtaca agaaggaagg catcgagtgg 1620
gagttcattg acttcggaat ggacctggct gcctgcatcg agctcatcga gaagcctatg 1680
ggcatcttct ccatcctgga agaggagtgc atgttcccca aggcaacaga cacctccttc 1740
aagaacaagc tgtatgacca gcatcttgga aaatccaaca acttccagaa gcccaagcct 1800
gccaaaggca aggctgaggc tcacttctcg ctggtgcact atgccggcac cgtggactac 1860
aacatcgccg gctggctgga caaaaacaag gacccccctga atgagactgt ggtggggctg 1920
taccagaagt cttcgctgaa gcttctctcc ttcctttttt ccaactatgc tggtgcagag 1980
acaggtgact ccggaggaag caagaagggc gggaagaaga agggctcctc tttccagacc 2040
gtgtcggccg tgttcaggga aaatttaaac aaattgatga ctaacttaag gagcacccac 2100
cctcactttg tacgatgtct gattcccaat gagaccaaga ctcctggtgt gatggaccac 2160
tacttggtca tgcaccagct gcgctgtaac ggggtcctcg agggcatccg gatttgcagg 2220
aagggattcc ccagccggat cctctatgct gacttcaagc agcggtaccg gatcctcaat 2280
gccagtgcta tccctgaagg gcagttcatt gacagcaaaa atgcctcaga gaagctcctc 2340
aactccatcg atgtggaccg ggagcagttc aggttcggca acaccaaggt gtttttcaaa 2400
gctgggctcc tgggactttt ggaggagatg agagatgaga agctggtgac gctgatgaca 2460
agcacgcagg cggtgtgcag gggtacctg atgcgggtgg agttcaagaa gatgatggag 2520
aggagggact ccatcttctg catccaatac aacatccgct cttttatgaa cgtcaagcac 2580
tggccctgga tgaacctgtt cttcaaaatc aagcccctgc tgaagagtgc agaggccgag 2640
aaggagatgg ccaccatgaa ggaagacttt gagaggacca aggaagaact ggcccgatct 2700
gaggctcgcc ggaaggagct ggaggagaaa atggtctccc tcctgcagga gaagaatgac 2760
ctccaattgc aggtccagtc tgaaacagaa aatctgatgg acgctgagga acggtgtgaa 2820
ggactcatca aaagcaagat cctactggaa gcaaaagtca aggagctgac ggagagattg 2880
gaagaggaag aggagatgaa ttctgaattg gttgccaaga agaggaatct ggaagataaa 2940
tgctcctctc tcaagagaga cattgatgat ctggagctga ccttgacgaa agttgaaaag 3000

gagaagcatg ccacagagaa caaggtaaag aatctttccg aagaaatgac agcacttgaa 3060
gaaaacattt ccaaattgac caaagaaaag aaatctctac aggaggccca tcagcaaaca 3120
ctggatgatc ttcaggtgga agaagataaa gtcaatggtc taatcaaaat aaatgccaag 3180
cttgaacagc aaacagatga tcttgagggt tccttagagc aggagaagaa actgcgggcg 3240
gacttggaaa gggcgaagag gaagctggaa ggagatctga aaatgtccca ggaatccatt 3300
atggatctag aaaatgaaaa gcagcaaata gaagagaaat tgaaaaagaa ggagtttgaa 3360
ctcagtcagt tacaagccag aatagatgac gaacaagtcc acagtttgca gtttcaaaag 3420
aagattaaag agctgcaagc ccgcatagaa gagctggagg aggaaattga agcggaacac 3480
acgctcagag ccaagattga gaagcagcgc tcagatctgg ccagggaact ggaggagatc 3540
agcgagaggc tggaagaagc cagtggggcc acttcagccc agattgagat gaacaagaag 3600
agggaggctg agttccagaa aatgcgcagg gacctggagg aggccaccct gcagcacgaa 3660
gccacagcag ccaccctgag gaagaagcaa gcagatagtg tggccgagct tggggagcag 3720
attgacaacc tgcagcgggt gaagcagaag ctggagaagg agaagagcga gctgaagatg 3780
gagatcgacg acatggccag caacatcgag gctctctcca agtcaaagag taacatagaa 3840
agaacgtgcc ggacggtaga agatcaattt agtgaaatca aagccaagga cgagcaacag 3900
acacagttga tccatgatct gaacatgcag aaagcaagac tgcagaccca aaatggggag 3960
ctgagccacc gagtggaaga gaaggagtct ctgatttcac agctgaccaa aagcaagcag 4020
gccctcaccc agcagctgga ggagcttaag aggcaaatgg aagaagaaac caaggccaag 4080
aacgccatgg cgcacgccct gcagtcctcc cgccacgact gtgacctgct gcgggaacag 4140
tatgaggagg agcaggaagc caaggccgag ctgcagaggg cgctgtccaa ggccaacagt 4200
gaggttgccc agtggaagac caaatacgag acggacgcca ttcagcgcac agaagagctg 4260
gaggaggcca agaaaaaact ggcccagagg ctccaggaag cagaggagaa gacggagacg 4320
gcgaactcca agtgcgcatc gttggagaaa accaagcaga ggctgcaggg agaggtggag 4380
gatctgatgc gggatctgga gcgctcccac accgcctgtg ccacactgga caagaagcag 4440
aggaacttcg acaaggtcct tgcagagtgg aagcaaaagc tggacgaaag ccaggctgag 4500
ctggaagctg ctcagaagga gtccaggtca ctcagcactg aactcttcaa gatgaggaat 4560
gcctatgagg aggtggtgga ccagttagag acactgaggc gagagaacaa aaatctgcaa 4620
gaagagattt ccgacttaac tgagcagatt gcagaaactg gcaagaatct tcaggaagcg 4680
gaaaagacca agaagctagt ggagcaggaa aagtcagatc tgcaggtcgc cttagaagaa 4740
gtggagggtt ccttggaaca cgaggagagc aagatcttgc gcgtgcagct agagctgagc 4800

caggtgaaat ccgagctaga ccgcaaggtc attgagaagg atgaagaaat cgagcagcta 4860

aaaagaaaca gccagcgggc agcagaggcc ctgcagagcg tgctggatgc tgaaatccgc 4920

agccggaacg acgccctgag gctaaagaag aagatggagg gagaccttaa tgagatggag 4980

attcagctgg gccactccaa ccgccagatg gcagagaccc agaggcatct gcgcacggtc 5040

cagggccagc tcaaggactc ccagctgcat ctcgatgacg ccctgaggag caatgaggac 5100

ctcaaggagc agctggccat cgtggagcgc aggaatggcc tcctgctgga ggagctggag 5160

gaaatgaagg tggccctgga acagacggag cggacccgca ggctgtcaga gcaggagctg 5220

ctggacgcca gcgaccgcgt gcagctcctg cactcccaga acacaagcct gataaatacc 5280

aagaaaaaac tggaggctga catagctcag tgccaggcag aggtggagaa ctcgatccag 5340

gagtccagga acgcagagga gaaggccaag aaggccatca cggatgctgc catgatggct 5400

gaggagctaa agaaggaaca ggacaccagc gcccacctgg agcggatgaa gaagaacctg 5460

gagcagacgg tgaaggacct gcagcaccgt ctagatgagg ctgaacaact ggcgctgaag 5520

ggcgggaaga agcagatcca gaaactggag aaccgggtgc gggagctgga aaatgagctt 5580

gatgtggaac agaagagggg agctgaagcc ctgaagggag cccacaagta cgaacgcaaa 5640

gtcaaggaga tgacttacca ggctgaggag gaccgcaaga atatccttag gctccaggac 5700

ctggtggaca agctgcaggc caaagtgaag tcttacaaga ggcaggctga ggaggcggag 5760

gagcaggcca acacgcagct gtccagatgc cggagagtcc agcatgagct agaggaggcc 5820

gcggagaggg cggacatcgc tgagtcccag gtcaacaagc tgagggccaa gagccgagac 5880

gtgggcagcc agaagatgga agaatgaggc tcacctgatg ctcgttgcca tgggacacct 5940

ccgagagagt ggagggaaaa tgtgtgagaa ataaattctc ctaaatactc gg 5992

<210> 39
<211> 661
<212> DNA
<213> Human

<400> 39
ggagtggcag ccggagtctg aactgtcctg ggggaccaag caggagctta agatgggcaa 60

gacctggggc cctgggcaga cgcatcaaag caggcagaag caggcatggc cagcaggaag 120

accaagaaga aggaaggggg tgccctccgg gcccagagag cctcatccaa tgtcttctcc 180

aactttgagc agactcagat ccaggagttc aaggaggcat tcacactcat ggatcagaac 240

cgagatggct tcattgacaa ggaggacctg aaggacacct atgcctccct gggcaagacc 300

aacgtcaagg acgacgagct ggacgccatg ctcaaagagg cctcggggcc catcaacttc 360

accatgtttc tgaacctgtt tggggagaag ctgagcggta ccgacgccga ggagaccatt 420

cttaacgcct tcaagatgct ggacccggac gggaaaggga aaatcaacaa ggagtacatc 480

aagcgtctgc tgatgtccca ggctgacaag atgacggcgg aagaggtgga ccagatgttc 540

cagttcgcct ccatcgatgt ggcgggcaac ctggactaca aggcgctcag ctacgtgatc 600

acccacgggg aggagaagga ggagtgagac ccagccgggt caataaacct ggacgcttgg 660

a 661

<210> 40
<211> 5749
<212> DNA
<213> Human

<400> 40
cgcgggagcc aacttcaggc tgctcagagg aagcccgtgc agtcagtcac ctgggtgcaa 60

gagcgttgct gcctcgggct ctcccgctgc agggagagcg gcactcgctg gcctggatgt 120

ggttggattt agggggctc cgcagcaggg gtttcgtggc ggtggcaagc gctgcaacag 180

gtagacggcg agagacggac cccggccgag gcagggatgg agaccaaagg ctaccacagt 240

ctccctgaag gtctagatat ggaaagacgg tggggtcaag tttctcaggc tgtggagcgt 300

tcttccctgg gacctacaga gaggaccgat gagaataact acatggagat tgtcaacgta 360

agctgtgttt ccggtgctat tccaaacaac agtactcaag gaagcagcaa agaaaaacaa 420

gaactactcc cttgccttca gcaagacaat aatcggcctg ggattttaac atctgatatt 480

aaaactgagc tggaatctaa ggaactttca gcaactgtag ctgagtccat gggtttatat 540

atggattctg taagagatgc tgactattcc tatgagcagc agaaccaaca aggaagcatg 600

agtccagcta agatttatca gaatgttgaa cagctggtga aattttacaa aggaaatggc 660

catcgtcctt ccactctaag ttgtgtgaac acgcccttga gatcatttat gtctgactct 720

gggagctccg tgaatggtgg cgtcatgcgc gccattgtta aaagccctat catgtgtcat 780

gagaaaagcc cgtctgtttg cagccctctg aacatgacat cttcggtttg cagccctgct 840

ggaatcaact ctgtgtcctc caccacagcc agctttggca gttttccagt gcacagccca 900

atcacccagg gaactcctct gacatgctcc cctaatgctg aaaatcgagg ctccaggtcg 960

cacagccctg cacatgctag caatgtgggc tctcctctct caagtccgtt aagtagcatg 1020

aaatcctcaa tttccagccc tccaagtcac tgcagtgtaa aatctccagt ctccagtccc 1080

aataatgtca ctctgagatc ctctgtgtct agccctgcaa atattaacaa ctcaaggtgc 1140

tctgtttcca gcccttcgaa cactaataac agatccacgc tttccagtcc ggcagccagt 1200

actgtgggat ctatctgtag ccctgtaaac aatgccttca gctacactgc ttctggcacc 1260
tctgctggat ccagtacatt gcgggatgtg gttcccagtc cagacacgca ggagaaaggt 1320
gctcaagagg tccctttcc taagactgag gaagtagaga gtgccatctc aaatggtgtg 1380
actggccagc ttaatattgt ccagtacata aaaccagaac cagatggagc ttttagcagc 1440
tcatgtctag gaggaaatag caaaataaat tcggattctt cattctcagt accaataaag 1500
caagaatcaa ccaagcattc atgttcaggc acctctttta aagggaatcc aacagtaaac 1560
ccgtttccat ttatggatgg ctcgtatttt tcctttatgg atgataaaga ctattattcc 1620
ctatcaggaa ttttaggacc acctgtgccc ggctttgatg gtaactgtga aggcagcgga 1680
ttcccagtgg gtattaaaca agaaccagat gacgggagct attacccaga ggccagcatc 1740
ccttcctctg ctattgttgg ggtgaattca ggtggacagt ccttccacta caggattggt 1800
gctcaaggta caatatcttt atcacgatcg gctagagacc aatctttcca acacctgagt 1860
tcctttcctc ctgtcaatac tttagtggag tcatggaaat cacacggcga cctgtcgtct 1920
agaagaagtg atgggtatcc ggtcttagaa tacattccag aaaatgtatc aagctctact 1980
ttacgaagtg tttctactgg atcttcaaga ccttcaaaaa tatgtttggt gtgtggggat 2040
gaggcttcag gatgccatta tggggtagtc acctgtggca gctgcaaagt tttcttcaaa 2100
agagcagtgg aagggcaaca caactattta tgtgctggaa gaaatgattg catcattgat 2160
aagattcgac gaaagaattg tcctgcttgc agacttcaga aatgtcttca agctggaatg 2220
aatttaggag cacgaaagtc aaagaagttg ggaaagttaa aagggattca cgaggagcag 2280
ccacagcagc agcagccccc acccccaccc ccacccccgc aaagcccaga ggaagggaca 2340
acgtacatcg ctcctgcaaa agaaccctcg gtcaacacag cactggttcc tcagctctcc 2400
acaatctcac gagcgctcac accttccccc gttatggtcc ttgaaaacat tgaacctgaa 2460
attgtatatg caggctatga cagctcaaaa ccagatacag ccgaaaatct gctctccacg 2520
ctcaaccgct tagcaggcaa acagatgatc caagtcgtga agtgggcaaa ggtacttcca 2580
ggatttaaaa acttgcctct tgaggaccaa attaccctaa tccagtattc ttggatgtgt 2640
ctatcatcat ttgccttgag ctggagatcg tacaaacata cgaacagcca atttctctat 2700
tttgcaccag acctagtctt taatgaagag aagatgcatc agtctgccat gtatgaacta 2760
tgccagggga tgcaccaaat cagccttcag ttcgttcgac tgcagctcac ctttgaagaa 2820
tacaccatca tgaaagtttt gctgctacta agcacaattc caaaggatgg cctcaaaagc 2880
caggctgcat ttgaagaaat gaggacaaat tacatcaaag aactgaggaa gatggtaact 2940

aagtgtccca acaattctgg gcagagctgg cagaggttct accaactgac caagctgctg 3000
gactccatgc atgacctggt gagcgacctg ctggaattct gcttctacac cttccgagag 3060
tcccatgcgc tgaaggtaga gttccccgca atgctggtgg agatcatcag cgaccagctg 3120
cccaaggtgg agtcggggaa cgccaagccg ctctacttcc accggaagtg actgcccgct 3180
gcccagaaga actttgcctt aagtttccct gtgttgttcc acacccagaa ggacccaaga 3240
aaacctgttt ttaacatgtg atggttgatt cacacttgtt caacagtttc tcaagtttaa 3300
agtcatgtca gaggtttgga gccgggaaag ctgtttttcc gtggatttgg cgagaccaga 3360
gcagtctgaa ggattcccca cctccaatcc cccagcgctt agaaacatgt tcctgttcct 3420
cgggatgaaa agccatatct agtcaataac tctgattttg atattttcac agatggaaga 3480
agttttaact atgccgtgta gtttctggta tcgttcgctt gttttaaaag ggttcaagga 3540
ctaacgaacg ttttaaagct taccettggt ttgcacataa aacgtatagt caatatgggg 3600
cattaatatt cttttgttat taaaaaaaca caaaaaaata ataaaaaaat atatacagat 3660
tcctgttgtg taataacaga actcgtggcg tggggcagca gctgcctctg agccctcgct 3720
cgtccacggt cttctgcatc actggtatac acactcgtta gcgtccattt cttatttaat 3780
tagaatggat aagatgatgt taaatgcctt ggtttgattt ctagtatcta ttgtgttggc 3840
tttacaaata attttttgca gtcttttgct gtgctgtaca ttactgtatg tataaattat 3900
gaaggacctg aaataaggta taaggatctt ttgtaaatga gacacataca aaaaaaatct 3960
ttaatggtta ataggatgaa tgggaaagta tttttgaaag aattctattt tgctggagac 4020
tatttaagta ctatctttgt ctaaacaagg taattttttt ttgtaaagtg caatgtcctg 4080
catgcataat gaaccgttta cagtgtattt aagaaaggga aagctgtgcc ttttttagct 4140
tcatatctaa tttaccatta ttttacagtc tctgttgtaa ataaccacac tgaaacctct 4200
tcggttgtct tgaaaccttt ctactttttc tgtacttttt gttttgttct tggtctcccg 4260
cttggggcat ttgtgggact ccagcacgtt ttctggcttc tgcttcatcc tgctccatcg 4320
gggaatgaca cactgcggtg tctgcagctc ctggaaggtg tcatttgaca acacatgtgg 4380
gagaggaggt ccttggagtg ctgcagcttt gggaaagcct gcctcgtttc ccttttcctc 4440
tagaagcaga accagctcta cgagagtgag actgggaact tgatggctca gagagcatct 4500
tttcctccca ttttagaaaa tcagattttc tcctgtggga aaaaaaaatt ccatgcactc 4560
tctctctgtt aaagatcagc tattcccttc tgatcttgga aagaggttct gcactcctgg 4620
aaccggtcac aggaacgcac agatcatggc aggatgcgct gggacggccc atcttggcaa 4680
ggttcagtct gaatggcatg gagaccggga gatagagggg ttttagattt ttaaaaggta 4740

ggttttaaaa ataagtttta tacataaaca gttttggaga aaaattacag atcatataag 4800

caagacagtg gcactaaaat gtttaattca ttaatctgtt tgtttggcac tgatgcaatg 4860

tatggctttt ctcttgcccc aaatcacaaa catatgtatc tttggggaaa ctaacaatat 4920

gattgcacta aataaactac tttgaataga ggccaaatta atcttttaaa aatgatgata 4980

atcatcaggt ttactcagtg aaatcatatt aattattttc caaaatctaa aagctgtagc 5040

tggagaagcc catggccacg aggaagcagc aattaattag atcaacactt ttctccaggg 5100

ttcaccatgc aggcaacatt accttgtctt tcaaaagaca cctgccttag tgcaagggga 5160

aacctgtgaa agctgcactc agagggagga gtctttctta cataatttgc aatttcagga 5220

atttaattta taggcagatc tttaaataca gtcaacttac ggtgcacagt aatatgaaag 5280

ccacactttg aaggtaataa atacacagca tgcagactgg gagttgctag caaacaaatg 5340

gcttacttac aaaagcagct tttagttcag acttagtttt tataaaatga gaattctgac 5400

ttacttaacc aggtttggga tggagatggt ctgcatcagc tttttgtatt aacaaagtta 5460

ctggctcttt gtgtgtctcc aggtaacttt gcttgattaa acagcaaagc catattctaa 5520

attcactgtt gaatgcctgt cccagtccaa attgtctgtc tgctcttatt tttgtaccat 5580

attgctctta aaaatcttgg tttggtacag ttcataattc accaaaaagt tcatataatt 5640

taaagaaaca ctaaattagt ttaaaatgaa gcaatttata tctttatgca aaaacatatg 5700

tctgtctttg caaaggactg taagcagatt acaataaatc ctttactttt 5749

<210> 41
<211> 2306
<212> DNA
<213> Human

<400> 41
tcatcatcca agtttgtagt tcatttaaaa atacaacatt aaacacattt tgctaggatg 60

tcaaatagtc acagttctaa gtagttggaa acaaaattga cgcatgttaa tctatgcaaa 120

gagaaaggaa aggatgaggt gatgtattga ctcaaggttc attcttgctg caattgaaca 180

tcctcaagag ttgggatgga aatggtgatt tttacatgtg tcctggaaag atattaaagt 240

aattcaaatc ttccccaaag gggaaaggaa gagagtgata ctgacctttt taagtcatag 300

accaaagtct gctgtagaac aaatatggga ggacaaagaa tcgcaaattc ttcaaatgac 360

tattatcagt attattaaca tgcgatgcca caggtatgaa agtcttgcct tatttcacaa 420

ttttaaaagg tagctgtgca gatgtggatc aacatttgtt taaaataaag tattaatact 480

ttaaagtcaa ataagatata gtgtttacat tctttaggtc ctgaggggca gggggatctg 540

tgatataaca aaatagcaaa agcggtaatt tccttaatgt tatttttctg attggtaatt 600
atttttaaca gtacttaatt attctatgtc gtgagacact aaaatcaaaa acgggaatct 660
catttagact ttaatttttt tgagattatc ggcggcacaa tcactttgta gaaactgtaa 720
aaaataaaag tatctcctag tcccttaatt ttttcataaa tatttctggc ttttgagtag 780
tgtatttata ttgtatatca tactttcaac tgtagacaat tatgatgcta atttattgtt 840
tcttggtttc acctttgtat aagatatagc caagactgaa gaaaccaaat atatgtgttt 900
actgtagcat gtcttcaaat tagtggaact tagttcaggg acatagaaga gtcttaatga 960
attaaaatca ttcacttgat taaatgtctg taaatcttca tcattcctac tgtagtttat 1020
ttaatatcta ttgtaaatta tgtgacttgt agcttcctct ggttttcaag taaactcaac 1080
aaggtggagt cttacctggt tttcctttcc aagcattgta aattgtatac caaagatatt 1140
agttattact tctgtgtgta caaagaggat tattttatta tgtttattaa tcacctctaa 1200
tactcatcca catgaagggt acacattagg taagctgggc gttgactcat gcgcagtctc 1260
agtcacccgt gttatcttcg tggctcaaag gacaatgcaa aatcgccgat cagagctcat 1320
acccaaagca ttacagagaa cagcagcatc attgccctcc ccagctgaaa aacaagttgg 1380
ctagaagata catggagagg aatggtgtgg tcaacagtta atgaaacggt tctatcatgc 1440
atgtgtaatg tggatggaga caattataag atttgactat aactatttgg agggtcttta 1500
acattgccaa aaaaacaaat atgttgattt ttattttatt ttattttta ttttaagagg 1560
cgggatcttg atctcacatg ttgcccaggc tggccttgaa ctcctgggct caagcattcc 1620
tcctgcctca gcctccccca tagctgggac taggggtgca tgccagcata cctggctacg 1680
ttgactctta aaatctatgt tctcttattt taaagataca gtgctcccca ctgaaaatta 1740
aacctaaaaa atgtcacata ttggtatgtt gttaacctgg tagattaaat catgagaatg 1800
attagaaaga cgggcaacac agcgggttac atccacactg ctgatcacac caacgacagg 1860
agctgataag caagaaagcg tcacagccag cgtctgttca cccaaggttg acaagtgaag 1920
tttctctaat gttgattgtt agccgatttg taacctggca tttacttagc aactgcctta 1980
tcaattacag gatttgccgg taaaagcaga ctcaaatata aaggtttttg gcttaacttg 2040
gtttattata gttgctctat gtttgtaaac agacaatctc taatgtctga ttatttgtat 2100
cacagatctg cagctgcctt ggacttgaat ccatgcaatg tttagagtgt gaagtcagtt 2160
acttgttgat gttttcttac tgtatcaatg aaatacatat tgtcatgtca gttcttgcca 2220
ggaacttctc aacaaaatgg aatttttttt ttcagtattt caataaatat tgatatgccc 2280

agcctgataa aaaaaaaaaa aaaaaa 2306

<210> 42
<211> 7609
<212> DNA
<213> Human

<400> 42
atctaccacc ttaaaaccct gatctagaaa aaatatatat tcatgatagg aagttataac 60

taagaaaatt tatttgcctc ttaatgctcc tgaatgaaag aaattatccc tttgttcttt 120

gggaggactt gtgtatctga gattgttgta ataatcagtc attttattaa aaccttgaca 180

tgatcaccag ggaggaaaaa tagagcaata gtcaaaacct gtgtgttagt ccaagatgac 240

ttctgaagaa atgacagctt ctgttctcat acctgtgact cagagaaaag tggtttctgc 300

ccagtcggct gcagatgaaa gtagtgaaaa ggtctcagac atcaatattt caaaagcaca 360

tactgtcaga cgaagtgggg agacttctca taccatctca caactgaaca aacttaaaga 420

agaaccttct ggaagcaact tgccaaagat tctctcaata gcgagggaga aaatagtgag 480

tgatgagaac agtaatgaaa aatgttggga gaaaatcatg ccagattctg cgaaaaacct 540

taacattaac tgcaacaaca tattgagaaa ccatcagcat ggccttcctc agagacaatt 600

ttatgaaatg tacaactctg ttgctgagga agacttgtgt ttagaaactg gaattccttc 660

tccactggaa agaaaggtgt tccctggaat tcaactggaa ctagacagac cttccatggg 720

cattagtcct ttaggaaatc agtcagtgat catagagaca ggcagagcac accctgacag 780

cagaagggca gtatttcatt ttcattatga agttgacaga agaatgtcag acactttctg 840

taccctatca gaaaacttaa ttttagacga ttgtggaaat tgtgtaccac tacctggggg 900

tgaggagaag caaaagaaaa actatgtggc atatacctgt aaactgatgg aattggccaa 960

aaattgtgat aataagaatg agcagctgca gtgtgatcat tgtgacacct tgaatgataa 1020

atacttttgc tttgaaggct cttgtgagaa ggttgacatg gtatattcag gtgatagctt 1080

ttgtaggaaa gactttactg acagtcaagc tgccaagacc tttttgagcc attttgagga 1140

cttccctgat aattgtgatg atgtagaaga agacgctttt aaaagcaaaa aggagcgatc 1200

cactttgtta gtcaggagat tctgtaaaaa tgacagagaa gttaagaaat ctgtgtatac 1260

tggaacaaga gcaattgtga gaactctgcc ttctggccac attgggctga ctgcatggag 1320

ttacatagat cagaagagaa atggtccctt actgccttgt gggagagtaa tggaaccccc 1380

gtcaacagtg gagataaggc aagatgggag ccaacgtctg tcagaagccc agtggtatcc 1440

tatctacaat gcagtgagaa gagaagaaac agaaaataca gttggatctc tactccattt 1500

cctcaccaag ctcccagcct ccgagacagc ccatggaagg ataagcgttg gtccatgctt 1560
aaagcaatgt gtccgagaca ctgtatgtga gtatcgcgcc accctccaaa ggacttcaat 1620
atcgcagtac atcaccggtt ctctcctaga agcaaccacg tctttgggag caagaagtgg 1680
ccttctcagt acttttggag gatccactgg acgaatgatg ctgaaagaac gccagccagg 1740
cccctctgtg gccaattcca atgccctccc ttcaagttca gctgggatca gcaaggagct 1800
gatcgatctg cagcctctca tccagttccc agaggaagtc gccagcatcc tgatggagca 1860
agagcagact atttaccgca gggtcttgcc agtcgactac ctttgcttct taacacggga 1920
cttgggcact cctgaatgcc agagctcctt gccctgcctc aaagcatcca tctcagcgtc 1980
gattcttacc actcagaatg gagagcacaa tgcccttgaa gatctggtga tgaggtttaa 2040
tgaggtgagc tcctgggtga catggctgat cctcacggca ggctccatgg aggagaagcg 2100
agaagtcttt tcatatttgg tgcatgtggc caaatgctgc tggaacatgg gcaactacaa 2160
cgctgtcatg gagttcttgg ctggcctcag gtcaagaaaa gttttaaaaa tgtggcagtt 2220
catggaccag tctgatattg agaccatgag gagcctgaag gatgctatgg cccagcatga 2280
gtcctcttgt gagtacagaa aggtggtgac acgtgccctg cacatccctg gctgtaaggt 2340
ggttccattc tgtggggtgt ttctgaagga gctctgtgaa gtgcttgacg gcgcctccgg 2400
tctcatgaag ctttgcccgc ggtacaattc ccaagaagaa actttagagt ttgtagcaga 2460
ttacagtgga caagataatt tcttacaacg agtgggacaa aatggcttaa agaattcgga 2520
gaaggagtcc actgtcaaca gcatctttca ggtcatccgg agctgcaatc gaagtctgga 2580
gacagacgag gaggacagcc ccagtgaagg gaacagctcc aggaaaagct ccttgaagga 2640
taaaagccga tggcagttta taattggaga tttgttggat tcagacaatg acatctttga 2700
gcaatccaaa gaatacgact ctcatggttc agaggactca cagaaggcct tcgaccatgg 2760
gacggagctc atcccttggt acgtgctgtc catccaagcc gatgtgcacc agttcctgct 2820
gcaggggggcc acggtcatcc actacgacca ggacacacac ctctctgccc gctgcttcct 2880
ccagcttcag cccgacaata gcaccttgac ctgggtaaag cccacaactg cctccccagc 2940
cagcagtaaa gcaaaacttg gtgtacttaa taacacagct gagcctggaa aattcccact 3000
actgggtaat gctggattaa gtagcctgac ggaaggggtc ttggatcttt ttgcagtgaa 3060
ggctgtatac atgggccacc ctggcattga tatacacact gtgtgtgttc agaacaaact 3120
gggtagcatg ttcctgtcag agactggtgt gacattgctc tatgggcttc agaccacaga 3180
caacagatta ttgcacttcg tggcaccaaa gcacacagct aaaatgctct tcagcggatt 3240
attggaactc actagagctg tgagaaagat gaggaaattc cctgaccaaa gacagcagtg 3300

gctgcggaaa cagtacgtca gcctttatca ggaggatgga cggtatgaag gcccaacttt 3360
ggctcacgct gtggagttgt ttggtggcag acggtggagt gctcgaaacc ccagccccgg 3420
aacatcagca aagaatgctg agaagcccaa tatgcagaga aacaataccc tgggcataag 3480
cactaccaag aaaaagaaga aaatcctcat gaggggtgag agtggagagg taactgacga 3540
tgagatggca acccgaaagg ccaagatgca caaagagtgt cgaagccgga gtggttctga 3600
tcctcaagac attaatgaac aagaagaatc agaggtgaat gccatcgcta accctccaaa 3660
ccccctccct tccagaagag cccactcttt gaccacagct gggtccccca acttggctgc 3720
cgggacgtca tctcccatca ggccagtgtc ctcccctgtg ctgtcttctt caaacaagag 3780
cccatccagt gcttggagca gtagtagctg gcacgggcgg atcaaaggcg gcatgaaggg 3840
atttcagagc ttcatggttt cagatagcaa catgagtttt gttgaatttg ttgagctgtt 3900
caaatcattc agtgtcagga gccgcaagga cctgaaggat ctgtttgatg tctatgcagt 3960
gccctgcaac cgatctggct ccgagtcagc cccactctac accaacctga caattgatga 4020
aaacaccagc gatcttcagc ctgacctaga tctgttgacc agaaatgtct cggatttggg 4080
gttgttcatt aagagtaaac agcagctatc ggacaaccag aggcagatat ctgatgccat 4140
tgctgctgca agcattgtga caaatggcac tgggattgag agcacatctc tgggcatttt 4200
tggggtgggc atacttcagc tcaacgattt cctcgtgaat tgccaaggag aacactgcac 4260
ttatgatgaa atcctcagca tcatccagaa gttcgagcct agcatcagta tgtgtcatca 4320
gggactaatg tcatttgaag ggtttgccag gtttctgatg gataaagaaa attttgcctc 4380
aaaaaatgat gagtcacagg agaacattaa agaactgcag ctacccctct catactatta 4440
catcgaatct tcgcacaata cctacctcac gggccatcag ctcaaaggag aatcctcggt 4500
agaactctac agccaggtcc ttttgcaagg ctgtcgaagt gtagaattgg actgctggga 4560
cggagacgat gggatgccca tcatttatca tggacatacg ccgacaacca agatcccctt 4620
caaggaagtg gttgaagcca ttgatcgcag tgccttcatc aactctgacc tgccaatcat 4680
catatcgatt gagaaccact gttcattgcc tcagcaacga aaaatggcag aaattttcaa 4740
gactgtgttt ggagaaaagc tggtgactaa attcttattt gagactgatt tctcagatga 4800
tccaatgctt ccttcacctg accaactcag aaagaaagtt cttcttaaaa acaagaagct 4860
aaaagcccat cagacgccag tggatatctt aaagcaaaag gctcatcagt tagcatctat 4920
gcaagtgcag gcttataatg gtgggaatgc caacccccga cctgccaata atgaggaaga 4980
ggaagatgag gaggacgaat atgattatga ctatgaatcc ctttctgatg acaacattct 5040

ggaagacaga cctgaaaata aatcatgtaa tgacaagctt cagtttgaat ataatgaaga 5100
aatcccaaag aggataaaga aagcagataa ctctgcttgc aacaaaggaa aggtttatga 5160
tatggaactg ggagaagaat tttatcttga tcagaataaa aaggaaagca gacagattgc 5220
accagagctt tctgaccttg taatctatcg tcaagcagta aaatttccag gactgtcaac 5280
tctaaatgca tctggctcta gcagaggaaa agaaaggaaa agcaggaagt ccatttttgg 5340
caacaatccg ggcagaatga gcccagggga gacagcatca tttaacaaaa catctggaaa 5400
aagttcctgt gaaggcattc gacagacctg ggaggaatct tcttcccccc tcaacccaac 5460
cacgtccctc agtgctatca ttagaactcc caaatgttat catatctcgt cgctgaatga 5520
aaatgccgcc aaacgtctgt gtcgcaggta ttctcagaaa ctgatccagc acaccgcctg 5580
tcagctgctg agaacttacc ctgctgccac ccgcatcgac tcttccaacc cgaacccccct 5640
catgttctgg ctccatggga tacagcttgt ggcactcaac taccagactg atgatctccc 5700
tttacattta aatgctgcaa tgtttgaggc aaatggtggt tgtggttatg tattgaaacc 5760
tccagttctg tgggacaaga actgccccat gtatcagaag ttttctccac tagaaagaga 5820
tctggacagc atggatcctg cagtctattc tttaactatt gtctctggtc agaatgtgtg 5880
ccccagtaat agcatgggaa gcccgtgcat tgaagtcgac gtcctgggca tgcctctgga 5940
cagctgccat ttccgcacaa agcccatcca tcgaaacacc ctgaacccca tgtggaacga 6000
gcagtttctg ttccgcgttc acttcgaaga tcttgtattt cttcgttttg cagttgtgga 6060
aaacaatagt tcagcggtaa ctgctcagag aatcattcca ctgaaagctt taaaacgagg 6120
atatcgacat cttcagctgc gaaaccttca caatgaagtc ttggagattt ctagtttatt 6180
cattaacagc agaaggatgg aagaaaattc ctctggcaat accatgtcag cctcttcgat 6240
gtttaataca gaagaaagaa aatgtttgca gactcacaga gtcacggtgc atggggtccc 6300
agggccagag ccctttaccg ttttcactat taatggaggc accaaggcaa agcagcttct 6360
gcagcaaatt ctgacaaatg aacaagacat caaacctgtt accacagact atttttgat 6420
ggaagaaaaa tattttatat ctaaagaaaa gaatgaatgt aggaaacaac cattccagag 6480
agccattggt ccagaagagg agatcatgca aattttaagc agctggtttc cagaagaggg 6540
atacatgggc aggattgtct taaaaaccca gcaggaaaac ctagaagaga aaaacattgt 6600
tcaagatgac aaagaggtga tcttgagctc agaggaggag agtttctttg tccaagtgca 6660
tgatgtttct ccagagcaac ctcgaacagt catcaaagca ccccgcgtca gcactgcaca 6720
ggatgtcatt cagcagacct tatgcaaagc caaatattcc tacagcatcc tgagcaaccc 6780
caatccaagc gactatgtgc ttttggaaga ggtggtgaaa gacactacca acaagaagac 6840

taccacacca aagtcctctc agcgggtcct tctggatcag gagtgtgtgt ttcaagccca 6900

aagcaagtgg aaaggtgcag gaaaattcat ccttaagcta aaggagcagg tgcaggcatc 6960

tcgagaagat aaaaagaaag gcatttcttt cgcaagtgaa ctcaagaagc tcaccaagtc 7020

aactaaacag ccccgaggac ttacatcacc ttctcagctc ttgacctcag aaagtatcca 7080

aaccaaggag gagaaacctg tgggtggctt gtctccagtg acacaatgga ttaccgacag 7140

tgactaaggg cagcatgttt aacccaggtg gagatcttta agcaagaagt taaagagtga 7200

acatggtgga aaaaatataa ttattttcat cagacttaaa ctggaaattg atgatttctg 7260

aactgaagcc ttcacacatg tgagatccat gctgaggaga agcaaaatgg cacagggcta 7320

gttgccacca accaatttac tgatgaatga agcccagggg actgccattt tataaatgtc 7380

agcagttgga aaaatcgtca cgaattgact tagagcaagg gtcagcaagc ttgtctgtaa 7440

agggccaaac agtaaatatt ttagggctgg gggccataaa atatgttgca accacccaat 7500

tctgccattg tagtgcaaaa gcagccatag acaacacata catgaacgaa cgtggctgta 7560

ttccaataaa actttattta tggacactga aaaaaaaaaa aaaaaaaaa 7609

<210> 43
<211> 1922
<212> DNA
<213> Human

<400> 43
gcacgagaat gtccctgaga cccagaaggg cctgcgctca gctgctctgg caccccgctg 60

cagggatggc ctcctgggct aagggcagga gctacctggc gcctggtttg ctgcagggcc 120

aagtggccat cgtcaccggc ggggccacgg gcatcggaaa agccatcgtg aaggagctcc 180

tggagctggg gagtaatgtg gtcattgcat cccgtaagtt ggagagattg aagtctgcgg 240

cagatgaact gcaggccaac ctacctccca caaagcaggc acgagtcatt cccatacaat 300

gcaacatccg gaatgaggag gaggtgaata atttggtcaa atctacctta gatacttttg 360

gtaagatcaa tttcttggtg aacaatggag gaggccagtt tctttcccct gctgaacaca 420

tcagttctaa gggatggcac gctgtgcttg agaccaacct gacgggtacc ttctacatgt 480

gcaaagcagt ttacagctcc tggatgaaag agcatggagg atctatcgtc aatatcattg 540

tccctactaa agctggattt ccattagctg tgcattctgg agctgcaaga gcaggtgttt 600

acaacctcac caaatcttta gctttggaat gggcctgcag tggaatacgg atcaattgtg 660

ttgcccctgg agttatttat tcccagactg ctgtggagaa ctatggttcc tggggacaaa 720

gcttctttga agggtctttt cagaaaatcc ccgctaaacg aattggtgtt cctgaggagg 780

tctcctctgt ggtctgcttc ctactgtctc ctgcagcttc cttcatcact ggacagtcag 840

tggatgtgga tgggggccgg agtctctata ctcactcgta tgaggtacca gatcatgaca 900

actggcccaa gggagcaggg gacctttctg ttgtcaaaaa gatgaaggag acctttaagg 960

agaaagctaa gctctgagct gaggaaacaa ggtgtcctcc atcccccagt gccttcacat 1020

cttgaggata tgcttctgta ctttttaaaa gcttatagtt ggtatggaaa acatttttct 1080

tatttttaag tgttattaat tatatctatg gaaaaactat tcctgaaata tatacagtct 1140

tatgtcccaa tcagagtctt ttaacctatg atttaaaaat gtataagtaa cagaaattaa 1200

catattttaa tgactttact ttttatttct aagaaaagta tttgaaaaat ggaataattt 1260

taaatcaatg ataattctag ggatcatgaa ctcccagaag attttattat ttaattgtaa 1320

aggtagaggc cggacgcagt ggctcacgcc tgtaattcca gcactttggg aggccgaggt 1380

gggcgggtca gttgaggtca ggagttcaag accaggctgg ccaacatggt aaaaccctgt 1440

ctctactgaa aaacaacaaa aacaaaaaca caaattagtc gggtgtggtg gcacacacct 1500

gtagtcccag gtacttggga ggctgaggca ggaggatcgc ttgaacccag gaagcagagg 1560

ttgcagtgag ctgagatcgt gctactgcag tccagcctgg gctacagagt gagactgcat 1620

ctcaaaaaaa acccmaaaaa acaaaaacaa acaacaacaa caaaattata aaggtagaaa 1680

ataaatctaa attgtgtcgt aattaagatt attaaaatga gaattataca atgacttatt 1740

tttggtggca aatactttag gagcaataat gccttatggt aattattgat gtatagtttt 1800

ttttgtttat gaagtcaaat ttgtataaat ttttttaatt caaaggaaaa gttttatgtg 1860

attttaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1920

aa 1922

<210> 44
<211> 1182
<212> DNA
<213> Human

<400> 44
aggacaccag gcacagagat ccaaactatt atatcaaatc caatccctaa aatggaagaa 60

gccaaaagcc aaagtttgga ggaagacttt gaaggacagg ccacacatac aggacccaaa 120

ggagtaataa atgattggag aaagtttaaa ttagagagtc aagacagtga ttcaattcca 180

cctagcaaga aggagattct caggcaaatg tcttctcctc agagtaggaa tggcaaagat 240

tcaaaggaac gagtcagcag aaagatgagc attcaagaat atgaactaat ccataaagag 300

aaagaggatg aaaactgcct tcgtaaatac cgtagacagt gtatgcagga tatgcaccag 360

aagctgagtt ttgggcctag atatgggttt gtgtatgagc tggaaactgg aaagcaattc 420

ctagaaacaa ttgaaaagga actgaagatc accacaattg ttgttcacat ttatgaagat 480

ggtattaagg gttgtgatgc tctaaacagt agtttaacat gccttgcagc agaataccct 540

atagttaagt tttgtaaaat aaaagcttcg aatacaggtg ctggggaccg cttttcctta 600

gatgtacttc ctacactgct catctataaa ggtggggaac tcataagcaa ttttattagt 660

gttgctgaac agtttgctga agaatttttt gctggggatg tggagtcttt cctaaatgaa 720

tatgggttac tacctgaaag agaggtacat gtcctagagc ataccaaaat agaagaagaa 780

gatgttgaat gaagattcac tatgtcaata tctcatgttt atcctttagg tattggatga 840

tggttttggt agtatctata ttgcttttgt gaacacagag tatgggcacg gctatgctaa 900

cttgacaaaa atgactgatg caacaatcga gttattagca tttcatagta ttagttactc 960

aaattgatac aatgcttgac tacaaaacaa agctgtcttc agcaacatta ttagtagaca 1020

aagaggatgt ggataatatt atgacatttt tcaaaaatcc ctttcaagtt atgttttgtc 1080

ttttttactc cattttccct catcactgtt attatttgga cttttcaaat tacattattc 1140

attataattt tctttgtgta ataaaaatga aatctcatga ag 1182

<210> 45
<211> 3160
<212> DNA
<213> Human

<400> 45
cctcccctcg cccggcgcgg tcccgtccgc ctctcgctcg cctcccgcct cccctcggtc 60

ttccgaggcg cccgggctcc cggcgcggcg gcggaggggg cgggcaggcc ggcgggcggt 120

gatgtggcag gactctttat gcgctgcggc aggatacgcg ctcggcgctg ggacgcgact 180

gcgctcagtt ctctcctctc ggaagctgca gccatgatgg aagtttgaga gttgagccgc 240

tgtgaggcga ggccgggctc aggcgaggga gatgagagac ggcggcggcc gcggcccgga 300

gcccctctca gcgcctgtga gcagccgcgg gggcagcgcc ctcggggagc cggccggcct 360

gcggcggcgg cagcggcggc gtttctcgcc tcctcttcgt cttttctaac cgtgcagcct 420

cttcctcggc ttctcctgaa agggaaggtg gaagccgtgg gctcgggcgg gagccggctg 480

aggcgcggcg gcggcggcgg cggcacctcc cgctcctgga gcggggggga gaagcggcgg 540

cggcggcggc cgcggcggct gcagctccag ggagggggtc tgagtcgcct gtcaccattt 600

ccagggctgg gaacgccgga gagttggtct ctccccttct actgcctcca acacggcggc 660

ggcggcggcg gcacatccag ggacccgggc cggttttaaa cctcccgtcc gccgccgccg 720

caccccccgt ggcccgggct ccggaggccg ccggcggagg cagccgttcg gaggattatt 780
cgtcttctcc ccattccgct gccgccgctg ccaggcctct ggctgctgag gagaagcagg 840
cccagtcgct gcaaccatcc agcagccgcc gcagcagcca ttacccggct gcggtccaga 900
gccaagcggc ggcagagcga ggggcatcag ctaccgccaa gtccagagcc atttccatcc 960
tgcagaagaa gccccgccac cagcagcttc tgccatctct ctcctccttt ttcttcagcc 1020
acaggctccc agacatgaca gccatcatca aagagatcgt tagcagaaac aaaaggagat 1080
atcaagagga tggattcgac ttagacttga cctatattta tccaaacatt attgctatgg 1140
gatttcctgc agaaagactt gaaggcgtat acaggaacaa tattgatgat gtagtaaggt 1200
ttttggattc aaagcataaa aaccattaca agatatacaa tctttgtgct gaaagacatt 1260
atgacaccgc caaatttaat tgcagagttg cacaatatcc ttttgaagac cataacccac 1320
cacagctaga acttatcaaa ccctttttgtg aagatcttga ccaatggcta agtgaagatg 1380
acaatcatgt tgcagcaatt cactgtaaag ctggaaaggg acgaactggt gtaatgatat 1440
gtgcatattt attacatcgg ggcaaatttt taaaggcaca agaggcccta gatttctatg 1500
gggaagtaag gaccagagac aaaaagggag taactattcc cagtcagagg cgctatgtgt 1560
attattatag ctacctgtta aagaatcatc tggattatag accagtggca ctgttgtttc 1620
acaagatgat gtttgaaact attccaatgt tcagtggcgg aacttgcaat cctcagtttg 1680
tggtctgcca gctaaaggtg aagatatatt cctccaattc aggacccaca cgacgggaag 1740
acaagttcat gtactttgag ttccctcagc cgttacctgt gtgtggtgat atcaaagtag 1800
agttcttcca caaacagaac aagatgctaa aaaaggacaa aatgtttcac ttttgggtaa 1860
atacattctt cataccagga ccagaggaaa cctcagaaaa agtagaaaat ggaagtctat 1920
gtgatcaaga aatcgatagc atttgcagta tagagcgtgc agataatgac aaggaatatc 1980
tagtacttac tttaacaaaa aatgatcttg acaaagcaaa taaagacaaa gccaaccgat 2040
acttttctcc aaattttaag gtgaagctgt acttcacaaa aacagtagag gagccgtcaa 2100
atccagaggc tagcagttca acttctgtaa caccagatgt tagtgacaat gaacctgatc 2160
attatagata ttctgacacc actgactctg atccagagaa tgaacctttt gatgaagatc 2220
agcatacaca aattacaaaa gtctgaattt ttttttatca agagggataa aacaccatga 2280
aaataaactt gaataaactg aaaatggacc tttttttttt taatggcaat aggacattgt 2340
gtcagattac cagttatagg aacaattctc ttttcctgac caatcttgtt ttaccctata 2400
catccacagg gttttgacac ttgttgtcca gttgaaaaaa ggttgtgtag ctgtgtcatg 2460

tatatacctt tttgtgtcaa aaggacattt aaaattcaat taggattaat aaagatggca 2520

ctttcccgtt ttattccagt tttataaaaa gtggagacag actgatgtgt atacgtagga 2580

atttttcct tttgtgttct gtcaccaact gaagtggcta aagagctttg tgatatactg 2640

gttcacatcc taccccttttg cacttgtggc aacagataag tttgcagttg gctaagagag 2700

gtttccgaaa ggttttgcta ccattctaat gcatgtattc gggttagggc aatggagggg 2760

aatgctcaga aaggaaataa ttttatgctg gactctggac catataccat ctccagctat 2820

ttacacacac ctttctttag catgctacag ttattaatct ggacattcga ggaattggcc 2880

gctgtcactg cttgttgttt gcgcattttt ttttaaagca tattggtgct agaaaaggca 2940

gctaaaggaa gtgaatctgt attggggtac aggaatgaac cttctgcaac atcttaagat 3000

ccacaaatga agggatataa aaataatgtc ataggtaaga aacacagcaa caatgactta 3060

accatataaa tgtggaggct atcaacaaag aatgggcttg aaacattata aaaattgaca 3120

atgatttatt aaatatgttt tctcaattgt aaaaaaaaaa 3160

<210> 46
<211> 1224
<212> DNA
<213> Human

<400> 46
gggcaggaag acggcgctgc ccggaggagc ggggcgggcg ggcgcgcggg ggagcgggcg 60

gcgggcggga gccaggcccg ggcgggggcg ggggcggcgg ggccagaaga ggcggcgggc 120

cgcgctccgg ccggtctgcg gcgttggcct tggctttggc tttggcggcg gcggtggaga 180

agatgctgca gtccctggcc ggcagctcgt gcgtgcgcct ggtggagcgg caccgctcgg 240

cctggtgctt cggcttcctg gtgctgggct acttgctcta cctggtcttc ggcgcagtgg 300

tcttctcctc ggtggagctg ccctatgagg acctgctgcg ccaggagctg cgcaagctga 360

agcgacgctt cttggaggag cacgagtgcc tgtctgagca gcagctggag cagttcctgg 420

gccgggtgct ggaggccagc aactacggcg tgtcggtgct cagcaacgcc tcgggcaact 480

ggaactggga cttcacctcc gcgctcttct tcgccagcac cgtgctctcc accacaggtt 540

atggccacac cgtgcccttg tcagatggag gtaaggcctt ctgcatcatc tactccgtca 600

ttggcattcc cttcaccctc ctgttcctga cggctgtggt ccagcgcatc accgtgcacg 660

tcacccgcag gccggtcctc tacttccaca tccgctgggg cttctccaag caggtggtgg 720

ccatcgtcca tgccgtgctc cttgggtttg tcactgtgtc ctgcttcttc ttcatcccgg 780

ccgctgtctt ctcagtcctg gaggatgact ggaacttcct ggaatccttt tatttttgtt 840

ttatttccct gagcaccatt ggcctggggg attatgtgcc tggggaaggc tacaatcaaa 900

aattcagaga gctctataag attgggatca cgtgttacct gctacttggc cttattgcca 960

tgttggtagt tctggaaacc ttctgtgaac tccatgagct gaaaaaattc agaaaaatgt 1020

tctatgtgaa gaaggacaag gacgaggatc aggtgcacat catagagcat gaccaactgt 1080

ccttctcctc gatcacagac caggcagctg gcatgaaaga ggaccagaag caaaatgagc 1140

cttttgtggc cacccagtca tctgcctgcg tggatggccc tgcaaaccat tgagcgtagg 1200

atttgttgca ttatgctaga gcac 1224

<210> 47
<211> 4465
<212> DNA
<213> Human

<400> 47
caattgtcat acgacttgca gtgagcgtca ggagcacgtc caggaactcc tcagcagcgc 60

ctccttcagc tccacagcca gacgccctca gacagcaaag cctacccccg cgccgcgccc 120

tgcccgccgc tcggatgctc gcccgcgccc tgctgctgtg cgcggtcctg gcgctcagcc 180

atacagcaaa tccttgctgt tcccacccat gtcaaaaccg aggtgtatgt atgagtgtgg 240

gatttgacca gtataagtgc gattgtaccc ggacaggatt ctatggagaa aactgctcaa 300

caccggaatt tttgacaaga ataaaattat ttctgaaacc cactccaaac acagtgcact 360

acatacttac ccacttcaag ggattttgga acgttgtgaa taacattccc ttccttcgaa 420

atgcaattat gagttatgtc ttgacatcca gatcacattt gattgacagt ccaccaactt 480

acaatgctga ctatggctac aaaagctggg aagccttctc taacctctcc tattatacta 540

gagcccttcc tcctgtgcct gatgattgcc cgactccctt gggtgtcaaa ggtaaaaagc 600

agcttcctga ttcaaatgag attgtggaaa aattgcttct aagaagaaag ttcatccctg 660

atccccaggg ctcaaacatg atgtttgcat tctttgccca gcacttcacg catcagtttt 720

tcaagacaga tcataagcga gggccagctt tcaccaacgg gctgggccat ggggtggact 780

taaatcatat ttacggtgaa actctggcta gacagcgtaa actgcgcctt ttcaaggatg 840

gaaaaatgaa atatcagata attgatggag agatgtatcc tcccacagtc aaagatactc 900

aggcagagat gatctaccct cctcaagtcc ctgagcatct acggtttgct gtggggcagg 960

aggtctttgg tctggtgcct ggtctgatga tgtatgccac aatctggctg cgggaacaca 1020

acagagtatg cgatgtgctt aaacaggagc atcctgaatg gggtgatgag cagttgttcc 1080

agacaagcag gctaatactg ataggagaga ctattaagat tgtgattgaa gattatgtgc 1140

aacacttgag tggctatcac ttcaaactga aatttgaccc agaactactt ttcaacaaac 1200
aattccagta ccaaaatcgt attgctgctg aatttaacac cctctatcac tggcatcccc 1260
ttctgcctga cacctttcaa attcatgacc agaaatacaa ctatcaacag tttatctaca 1320
acaactctat attgctggaa catggaatta cccagtttgt tgaatcattc accaggcaaa 1380
ttgctggcag ggttgctggt ggtaggaatg ttccacccgc agtacagaaa gtatcacagg 1440
cttccattga ccagagcagg cagatgaaat accagtcttt taatgagtac cgcaaacgct 1500
ttatgctgaa gccctatgaa tcatttgaag aacttacagg agaaaaggaa atgtctgcag 1560
agttggaagc actctatggt gacatcgatg ctgtggagct gtatcctgcc cttctggtag 1620
aaaagcctcg gccagatgcc atctttggtg aaaccatggt agaagttgga gcaccattct 1680
ccttgaaagg acttatgggt aatgttatat gttctcctgc ctactggaag ccaagcactt 1740
ttggtggaga agtgggtttt caaatcatca acactgcctc aattcagtct ctcatctgca 1800
ataacgtgaa gggctgtccc tttacttcat tcagtgttcc agatccagag ctcattaaaa 1860
cagtcaccat caatgcaagt tcttcccgct ccggactaga tgatatcaat cccacagtac 1920
tactaaaaga acgttcgact gaactgtaga agtctaatga tcatatttat ttatttatat 1980
gaaccatgtc tattaattta attatttaat aatatttata ttaaactcct tatgttactt 2040
aacatcttct gtaacagaag tcagtactcc tgttgcggag aaaggagtca tacttgtgaa 2100
gacttttatg tcactactct aaagattttg ctgttgctgt taagtttgga aaacagtttt 2160
tattctgttt tataaaccag agagaaatga gttttgacgt ctttttactt gaatttcaac 2220
ttatattata agaacgaaag taaagatgtt tgaatactta aacactatca caagatggca 2280
aaatgctgaa agtttttaca ctgtcgatgt ttccaatgca tcttccatga tgcattagaa 2340
gtaactaatg tttgaaattt taaagtactt ttggttattt ttctgtcatc aaacaaaaac 2400
aggtatcagt gcattattaa atgaatattt aaattagaca ttaccagtaa tttcatgtct 2460
actttttaaa atcagcaatg aaacaataat ttgaaatttc taaattcata gggtagaatc 2520
acctgtaaaa gcttgtttga tttcttaaag ttattaaact tgtacatata ccaaaaagaa 2580
gctgtcttgg atttaaatct gtaaaatcag atgaaatttt actacaattg cttgttaaaa 2640
tattttataa gtgatgttcc tttttcacca agagtataaa cctttttagt gtgactgtta 2700
aaacttcctt ttaaatcaaa atgccaaatt tattaaggtg gtggagccac tgcagtgtta 2760
tctcaaaata agaatatttt gttgagatat tccagaattt gtttatatgg ctggtaacat 2820
gtaaaatcta tatcagcaaa agggtctacc tttaaaataa gcaataacaa agaagaaaac 2880
caaattattg ttcaaattta ggtttaaact tttgaagcaa actttttttt atccttgtgc 2940

actgcaggcc tggtactcag attttgctat gaggttaatg aagtaccaag ctgtgcttga 3000
ataacgatat gttttctcag attttctgtt gtacagttta atttagcagt ccatatcaca 3060
ttgcaaaagt agcaatgacc tcataaaata cctcttcaaa atgcttaaat tcatttcaca 3120
cattaatttt atctcagtct tgaagccaat tcagtaggtg cattggaatc aagcctggct 3180
acctgcatgc tgttcctttt cttttcttct tttagccatt ttgctaagag acacagtctt 3240
ctcatcactt cgtttctcct attttgtttt actagtttta agatcagagt tcactttctt 3300
tggactctgc ctatattttc ttacctgaac ttttgcaagt tttcaggtaa acctcagctc 3360
aggactgcta tttagctcct cttaagaaga ttaaaagaga aaaaaaaagg cccttttaaa 3420
aatagtatac acttatttta agtgaaaagc agagaatttt atttatagct aattttagct 3480
atctgtaacc aagatggatg caaagaggct agtgcctcag agagaactgt acggggtttg 3540
tgactggaaa aagttacgtt cccattctaa ttaatgccct ttcttattta aaaacaaaac 3600
caaatgatat ctaagtagtt ctcagcaata ataataatga cgataatact tcttttccac 3660
atctcattgt cactgacatt taatggtact gtatattact taatttattg aagattatta 3720
tttatgtctt attaggacac tatggttata aactgtgttt aagcctacaa tcattgattt 3780
ttttttgtta tgtcacaatc agtatatttt ctttggggtt acctctctga atattatgta 3840
aacaatccaa agaaatgatt gtattaagat ttgtgaataa atttttagaa atctgattgg 3900
catattgaga tatttaaggt tgaatgtttg tccttaggat aggcctatgt gctagcccac 3960
aaagaatatt gtctcattag cctgaatgtg ccataagact gaccttttaa aatgttttga 4020
gggatctgtg gatgcttcgt taatttgttc agccacaatt tattgagaaa atattctgtg 4080
tcaagcactg tgggttttaa tatttttaaa tcaaacgctg attacagata atagtattta 4140
tataaataat tgaaaaaaat tttcttttgg gaagagggag aaaatgaaat aaatatcatt 4200
aaagataact caggagaatc ttctttacaa ttttacgttt agaatgttta aggttaagaa 4260
agaaatagtc aatatgcttg tataaaacac tgttcactgt ttttttaaa aaaaaaactt 4320
gatttgttat taacattgat ctgctgacaa aacctgggaa tttgggttgt gtatgcgaat 4380
gtttcagtgc ctcagacaaa tgtgtattta acttatgtaa aagataagtc tggaaataaa 4440
tgtctgttta tttttgtact attta 4465

<210> 48
<211> 631
<212> DNA
<213> Human

<400> 48
caatacagct aaggaattat cccttgtaaa taccacagac ccgccctgga gccaggccaa 60

gctggactgc ataaagattg gtatggcctt agctcttagc caaacacctt cctgacacca 120

tgagggccag cagcttcttg atcgtggtgg tgttcctcat cgctgggacg ctggttctag 180

aggcagctgt cacgggagtt cctgttaaag gtcaagacac tgtcaaaggc cgtgttccat 240

tcaatggaca agatcccgtt aaaggacaag tttcagttaa aggtcaagat aaagtcaaag 300

cgcaagagcc agtcaaaggt ccagtctcca ctaagcctgg ctcctgcccc attatcttga 360

tccggtgcgc catgttgaat ccccctaacc gctgcttgaa agatactgac tgcccaggaa 420

tcaagaagtg ctgtgaaggc tcttgcggga tggcctgttt cgttccccag tgaagggagc 480

cggtccttgc tgcacctgtg ccgtccccag agctacaggc cccatctggt cctaagtccc 540

tgctgccctt ccccttccca cactgtccat tcttcctccc attcaggatg cccacggctg 600

gagctgcctc tctcatccac tttccaataa a 631

<210> 49
<211> 701
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (464)..(464)
<223> n is a, c, g, or t

<400> 49
tttttttttc gcataaatat tgcttttatt acaagaaaga agagaccacc tctgaagtaa 60

ggcacaacac aattccattg tcactgtggc agaagtccct gttgctcatc cctttgatct 120

cagccaagac tgtggtccac gggcctaagg cacttgagct tttccctcaa ctgaagtgta 180

gggggtgcct gagagctgag cctcgtggga gtgtccatgg tctctggacc tgcatcgaag 240

ttcatgtgtt tccactggtg ctgaagatga acatcaagaa ttactagaca tgtaaaagtg 300

tctttaagtg tctttcctcc tgagtccacc tttggcaatg gtccccaaag cctggcccct 360

tagagatgca gctccagatc ctggccaccc tcagggttca aagagactgg cccaggggta 420

cacaattgct ggaatattct ctgcgagtca tgcacacgtg cggnggtgag gtgcagttat 480

atggtgacac acacagtgtt actgtgagct ctcagggtgc acagagggca ggtgacaagg 540

gcatcagcta atctgtccca cctggtccag cccatccagt tcaggggcat caaggggggct 600

gaggccccgg tagccactgt agaccctgtg actatcactg acaccgtcac tgggctccat 660

tgggcaaatg tagtccgcga ttcatcgaac ttcttttttc t 701

<210> 50
<211> 602
<212> DNA
<213> Human

<400> 50
atttagaaat gtaaacattt atttaaaagt aggtagcaag ttaaaaatga atacttgcct 60

gaaatcataa aacataatca agttcttttt aaaacagtta atttttttcc tataatttac 120

tttcatcgaa agtatattat ctttgtttaa catgctagat agaagcaatt tagcaacata 180

aaatatatta gctatagtat gttcaaaaga atgagaaata taaattcaga gatgagacca 240

tcattttttg cagttaaaaa aaaatgttga ttctggtgca acatacactg attatccagg 300

ttttacattt tagggctgaa accctgagga acctgctggt gactgtttag cactgagcag 360

agttcagtgt gcatgcgctt ccagagttaa aagctaaagc agactgagaa acaaaaaacc 420

aacatctttg catttctgag ttttcacttg taatcatagg ttttcccaaa ttattagaat 480

gtctatacct tagctgtttt actagaatga tttatgctag tatagtcact tgtttagaag 540

tcggaaaaag atcatttttt ctttttagaa attactaagc tctgttgtac tacagctgat 600

cc 602

<210> 51
<211> 1653
<212> DNA
<213> Human

<400> 51
acgtccgggg aggggccagg tgagcggcag acccggcacg caggtggggg ccggcggggt 60

ccgtggccag agctgcagag agacaaggcg gcggcggctg ctgtgctggg tgcagtgagg 120

aagaggccct cggtggtgcc catggctggc caggatcctg cgctgagcac gagtcacccg 180

ttctacgacg tggccagaca tggcattctg caggtggcag gggatgaccg ctttggaaga 240

cgtgttgtca cgttcagctg ctgccggatg ccgccctccc acgagctgga ccaccagcgg 300

ctgctggagt atttgaagta cacactggac caatacgttg agaacgatta taccatcgtc 360

tatttccact acgggctgaa cagccggaac aagccttccc tgggctggct ccagagcgca 420

tacaaggagt tcgataggaa agacggggat ctcactatgt ggcccaggct ggtctcgaac 480

tccaagctca agcgatcctc ccacctcagc ctcccaaagt actgggatta caggtacaag 540

aagaacttga aggccctcta cgtggtgcac cccaccagct tcatcaaggt cctgtggaac 600

atcttgaagc ccctcatcag tcacaagttt gggaagaaag tcatctattt caactacctg 660

agtgagctcc acgaacacct taaatacgac cagctggtca tccctcccga agttttgcgg 720

tacgatgaga agctccagag cctgcacgag ggccggacgc cgcctcctac caagacacca 780

ccgccgcggc ccccgctgcc cacacagcag tttggcgtca gtctgcaata cctcaaagac 840

aaaaatcaag gcgaactcat ccccccctgtg ctgaggttca cagtgacgta cctgagagag 900

aaaggcctgc gcaccgaggg cctgttccgg agatccgcca gcgtgcagac cgtccgcgag 960

atccagaggc tctacaacca agggaagccc gtgaactttg acgactacgg ggacattcac 1020

atccctgccg tgatcctgaa gaccttcctg cgagagctgc cccagccgct tctgaccttc 1080

caggcctacg agcagattct cgggatcacc tgtgtggaga gcagcctgcg tgtcactggc 1140

tgccgccaga tcttacggag cctcccagag cacaactacg tcgtcctccg ctacctcatg 1200

ggctttctgc atgcggtgtc ccgggagagc atcttcaaca aaatgaacag ctctaacctg 1260

gcctgtgtct tcgggctgaa tttgatctgg ccatcccagg gggtctcctc cctgagtgcc 1320

cttgtgcccc tgaacatgtt cactgaactg ctgatcgagt actatgaaaa gatcttcagc 1380

accccggagg cacctgggga gcacggcctg gcaccatggg aacaggggag cagggcagcc 1440

cctttgcagg aggctgtgcc acggacacaa gccacgggcc tcaccaagcc taccctacct 1500

ccgagtcccc tgatggcagc cagaagacgt ctctagtgtt gcgaacactc tgtatgtttc 1560

gagctacctc ccacacctgt ctgtgcactt gtatgttttg taaacttggc atctgtaaaa 1620

ataaccagcc attagatgaa ttcagaacct tct 1653

<210> 52
<211> 846
<212> DNA
<213> Human

<400> 52
gtataaggtc cacaccccgg gagctgagtg attgcagaaa ctggccttcc atctctctca 60

gacaccaagc tgcagatcca ggcttttctg ggaaagtgag gccaccatgg ctctggagaa 120

gtctcttgtc cggctccttc tgcttgtcct gatactgctg gtgctgggct gggtccagcc 180

ttccctgggc aaggaatccc gggccaagaa attccagcgg cagcatatgg actcagacag 240

ttcccccagc agcagctcca cctactgtaa ccaaatgatg aggcgccgga atatgacaca 300

ggggcggtgc aaaccagtga acacctttgt gcacgagccc ctggtagatg tccagaatgt 360

ctgtttccag gaaaaggtca cctgcaagaa cgggcagggc aactgctaca agagcaactc 420

cagcatgcac atcacagact gccgcctgac aaacggctcc aggtacccca actgtgcata 480

ccggaccagc ccgaaggaga gacacatcat tgtggcctgt gaagggagcc catatgtgcc 540

agtccacttt gatgcttctg tggaggactc tacctaaggt cagagcagcg agatacccca 600

cctccctcaa cctcatcctc tccacagctg cctcttccct cttccttccc tgctgtgaaa 660

gaagtaacta cagttagggc tcctattcaa cacacacatg cttccctttc ctgagtccca 720

tccctgcgtg attttggggg tgaagagtgg gttgtgaggt gggccccatg ttaacccctc 780

cactctttct ttcaataaaa cgcagttgca aacaataaaa aaaaaaaaaa aaaaaaaaaa 840

aaaaaa 846

<210> 53
<211> 2566
<212> DNA
<213> Human

<400> 53
ggcacgagtt gtgctcctcg cttgcctgtt ccttttccac gcattttcca ggataactgt 60

gactccaggc ccgcaatgga tgccctgcaa ctagcaaatt cggcttttgc cgttgatctg 120

ttcaaacaac tatgtgaaaa ggagccactg ggcaatgtcc tcttctctcc aatctgtctc 180

tccacctctc tgtcacttgc tcaagtgggt gctaaaggtg acactgcaaa tgaaattgga 240

caggttcttc attttgaaaa tgtcaaagat ataccctttg gatttcaaac agtaacatcg 300

gatgtaaaca aacttagttc cttttactca ctgaaactaa tcaagcggct ctacgtagac 360

aaatctctga atctttctac agagttcatc agctctacga agagacccta tgcaaaggaa 420

ttggaaactg ttgacttcaa agataaattg gaagaaacga aaggtcagat caacaactca 480

attaaggatc tcacagatgg ccactttgag aacattttag ctgacaacag tgtgaacgac 540

cagaccaaaa tccttgtggt taatgctgcc tactttgttg gcaagtggat gaagaaattt 600

cctgaatcag aaacaaaaga atgtcctttc agactcaaca agacagacac caaaccagtg 660

cagatgatga acatggaggc cacgttctgt atgggaaaca ttgacagtat caattgtaag 720

atcatagagc ttccttttca aaataagcat ctcagcatgt tcatcctact acccaaggat 780

gtggaggatg agtccacagg cttggagaag attgaaaaac aactcaactc agagtcactg 840

tcacagtgga ctaatcccag caccatggcc aatgccaagg tcaaactctc cattccaaaa 900

tttaaggtgg aaaagatgat tgatcccaag gcttgtctgg aaaatctagg gctgaaacat 960

atcttcagtg aagacacatc tgatttctct ggaatgtcag agaccaaggg agtggcccta 1020

tcaaatgtta tccacaaagt gtgcttagaa ataactgaag atggtgggga ttccatagag 1080

gtgccaggag cacggatcct gcagcacaag gatgaattga atgctgacca tcccttttatt 1140

tacatcatca ggcacaacaa aactcgaaac atcattttct ttggcaaatt ctgttctcct 1200

taagtggcat agcccatgtt aagtcctccc tgacttttct gtggatgccg atttctgtaa 1260

actctgcatc cagagattca ttttctagat acaataaatt gctaatgttg ctggatcagg 1320

aagccgccag tacttgtcat atgtagcctt cacacagata gacctttttt tttttccaat 1380

tctatctttt gtttcctttt ttcccataag acaatgacat acgcttttaa tgaaaaggaa 1440

tcacgttaga ggaaaaatat ttattcatta tttgtcaaat tgtccggggt agttggcaga 1500

aatacagtct tccacaaaga aaattcctat aaggaagatt tggaagctct tcttcccagc 1560

actatgcttt ccttctttgg gatagagaat gttccagaca ttctcgcttc cctgaaagac 1620

tgaagaaagt gtagtgcatg ggacccacga aactgccctg gctccagtga aacttgggca 1680

catgctcagg ctactatagg tccagaagtc cttatgttaa gccctggcag gcaggtgttt 1740

attaaaattc tgaattttgg ggattttcaa aagataatat tttacataca ctgtatgtta 1800

tagaacttca tggatcagat ctggggcagc aacctataaa tcaacacctt aatatgctgc 1860

aacaaaatgt agaatattca gacaaaatgg atacataaag actaagtagc ccataagggg 1920

tcaaaatttg ctgccaaatg cgtatgccac caacttacaa aaacacttcg ttcgcagagc 1980

ttttcagatt gtggaatgtt ggataaggaa ttatagacct ctagtagctg aaatgcaaga 2040

ccccaagagg aagttcagat cttaatataa attcactttc atttttgata gctgtcccat 2100

ctggtcatgt ggttggcact agactggtgg caggggcttc tagctgactc gcacagggat 2160

tctcacaata gccgatatca gaatttgtgt tgaaggaact tgtctcttca tctaatatga 2220

tagcgggaaa aggagaggaa actactgcct ttagaaaata taagtaaagt gattaaagtg 2280

ctcacgttac cttgacacat agtttttcag tctatgggtt tagttacttt agatggcaag 2340

catgtaactt atattaatag taatttgtaa agttgggtgg ataagctatc cctgttgccg 2400

gttcatggat tacttctcta taaaaaatat atatttacca aaaaattttg tgacattcct 2460

tctcccatct cttccttgac atgcattgta aataggttct tcttgttctg agattcaata 2520

ttgaatttct cctatgctat tgacaataaa atattattga actacc 2566

<210> 54
<211> 555
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (9)..(10)
<223> n is a, c, g, or t

<400> 54

tttttattnn ttcagttctg ggtctataga aacccagggg gattttcatt tgctacaaca 60

gattcccttc taataaaatg cactggcaag gtgaccagtg agtgacccaa tgtctggttg 120

ggaaatctct ctctgaactt cttgctgttg gacctaaaat gtggatgtaa attggatcac 180

agctggtttg gcattgaaaa aaatacatac acaacaaaca attacaactt ctttatatgg 240

cagtttttac tgggtgtcta atactctctt tactgtctca agtggaagtc caaacaaatt 300

tcatttttgt agtaaaaaat ctttatttcc aaaatgattt gttagccaaa agaactataa 360

accacctaac aagactttgg taagaaagag acttgatgct tcttataaat tccccattgc 420

aaacaaaaaa taacaatcca acaagagtca tgttacccat tcttagccat taacctggtt 480

ttaagtctcc aaaatcagga ttttaaaatg tacccaactg ggaccaaata caaacatgag 540

acactagggt ggctt 555

<210> 55
<211> 1984
<212> DNA
<213> Human

<400> 55
ggatccagag atttagattt tttataagct ttcctgccac cgaaacgggt gtttgggacc 60

tcacgaggcc ctgttcattc ttcgtcgctg cgctccccac tctgtactgg atgcatttac 120

tgacgttgtt gtctccgtcc ccagagtatg aacccccaag gtgactcatg cagctgtggg 180

tgcccggcat acagcatggt gactggaatg gatgagcacc caataaacat ttgttgcagg 240

aatgcaggag gacgggcagg ccagcaagca ggctgcctgg tttttcccac atgggctttt 300

ctgggaaaga agagcttcta tttttggaaa gggctgctat gattgagaaa agttcatggc 360

agcaaaaaaa ggacagacgt cgggagggaa acactcctag ttctcccaga caacacattt 420

tttaaaaaga ctccttcatc tctttaataa taacggtaac gacaatgaca atgatgatta 480

cttatgagtg cggctagtgc cagccactgt gttgtcactg ggcgagtaat gatctcattg 540

gatcttcacg gtgggcgtgc ggggctccag ggacagcctg cgttcctggg ctggctgggt 600

gcagctctct tttcaggaga gaaagctctc ttggaggagc tggaaaggtg cccgactcca 660

gccatgctgg cgctactgtg ttcctgcctg ctcctggcag ccggtgcctc ggacgcctgg 720

acgggcgagg actcggcgga gcccaactct gactcggcgg agtggatccg agacatgtac 780

gccaaggtca cggagatctg gcaggaggtc atgcagcggc gggacgacga cggcacgctc 840

cacgccgcct gccaggtgca gccgtcggcc acgctggacg ccgcgcagcc ccgggtgacc 900

ggcgtcgtcc tcttccggca gcttgcgccc cgcgccaagc tcgacgcctt cttcgccctg 960

gagggcttcc cgaccgagcc gaacagctcc agccgcgcca tccacgtgca ccagttcggg 1020

gacctgagcc agggctgcga gtccaccggg ccccactaca acccgctggc cgtgccgcac 1080

ccgcagcacc cgggcgactt cggcaacttc gcggtccgcg acggcagcct ctggaggtac 1140

cgcgccggcc tggccgcctc gctcgcgggc ccgcactcca tcgtgggccg ggccgtggtc 1200

gtccacgctg gcgaggacga cctgggccgc ggcggcaacc aggccagcgt ggagaacggg 1260

aacgcgggcc ggcggctggc ctgctgcgtg gtgggcgtgt gcgggcccgg gctctgggag 1320

cgccaggcgc gggagcactc agagcgcaag aagcggcggc gcgagagcga gtgcaaggcc 1380

gcctgagcgc ggcccccacc cggcggcggc cagggacccc cgaggccccc ctctgccttt 1440

gagcttctcc tctgctccaa cagacacctt ccactctgag gtctcacctt cgcctctgct 1500

gaagtctccc cgcagccctc tccacccaga ggtctcccta taccgagacc caccatcctt 1560

ccatcctgag gaccgcccca accctcggag ccccccactc agtaggtctg aaggcctcca 1620

tttgtaccga aacaccccgc tcacgctgac agcctcctag gctccctgag gtacctttcc 1680

acccagaccc tccttcccca ccccataagc cctgagactc ccgcctttga cctgacgatc 1740

ttcccccttc ccgccttcag gttcctccta ggcgctcaga ggccgctctg gggggttgcc 1800

tcgagtcccc ccacccctcc ccacccacca ccgctcccgc ggcaagccag cccgtgcaac 1860

ggaagccagg ccaactgccc cgcgtcttca gctgtttcgc atccaccgcc accccactga 1920

gagctgctcc tttgggggaa tgtttggcaa cctttgtgtt acagattaaa aattcagcaa 1980

ttca 1984

<210> 56
<211> 1621
<212> DNA
<213> Human

<400> 56
ggcacgaggg gacagctcct gcctcccgca gggcccacct gtgtccccca gcgccgctcc 60

acccagcagg cctgagcccc tctctgctgc cagacacccc ctgctgccca ctctcctgct 120

gctcgggttc tgaggcacag cttgtcacac cgaggcggat tctctttctc tttctctttc 180

tcttctggcc cacagccgca gcaatggcgc tgagttcctc tgctggagtt catcctgcta 240

gctgggttcc cgagctgccg gtctgagcct gaggcatgga gcctcctgga gactgggggc 300

ctcctccctg gagatccacc cccagaaccg acgtcttgag gctggtgctg tatctcacct 360

tcctgggagc cccctgctac gccccagctc tgccgtcctg caaggaggac gagtacccag 420

tgggctccga gtgctgcccc aagtgcagtc caggttatcg tgtgaaggag gcctgcgggg 480

agctgacggg cacagtgtgt gaaccctgcc ctccaggcac ctacattgcc cacctcaatg 540

gcctaagcaa gtgtctgcag tgccaaatgt gtgacccagc catgggcctg cgcgcgagcc 600

ggaactgctc caggacagag aacgccgtgt gtggctgcag cccaggccac ttctgcatcg 660

tccaggacgg ggaccactgc gccgcgtgcc gcgcttacgc cacctccagc ccgggccaga 720

gggtgcagaa gggaggcacc gagagtcagg acaccctgtg tcagaactgc cccccgggga 780

ccttctctcc caatgggacc ctggaggaat gtcagcacca gaccaagtgc agctggctgg 840

tgacgaaggc cggagctggg accagcagct cccactgggt atggtggttt ctctcaggga 900

gcctcgtcat cgtcattgtt tgctccacag ttggcctaat catatgtgtg aaaagaagaa 960

agccaagggg tgatgtagtc aaggtgatcg tctccgtcca gcggaaaaga caggaggcag 1020

aaggtgaggc cacagtcatt gaggccctgc aggcccctcc ggacgtcacc acggtggccg 1080

tggaggagac aataccctca ttcacgggga ggagcccaaa ccactgaccc acagactctg 1140

cacccccgacg ccagagatac ctggagcgac ggctgctgaa agaggctgtc cacctggcga 1200

aaccaccgga gcccggaggc ttgggggctc cgccctgggc tggcttccgt ctcctccagt 1260

ggagggagag gtggggcccc tgctggggta gagctgggga cgccacgtgc cattcccatg 1320

ggccagtgag ggcctggggc ctctgttctg ctgtggcctg agctccccag agtcctgagg 1380

aggagcgcca gttgcccctc gctcacagac cacacaccca gccctcctgg gccagcccag 1440

agggcccttc agaccccagc tgtctgcgcg tctgactctt gtggcctcag caggacaggc 1500

cccgggcact gcctcacagc caaggctgga ctgggttggc tgcagtgtgg tgtttagtgg 1560

ataccacatc ggaagtgatt ttctaaattg gatttgaatt cggaaaaaaa aaaaaaaaaa 1620

a 1621

<210> 57
<211> 2755
<212> DNA
<213> Human

<400> 57
cctacccgcg cgcaggccaa gttgctgaat caatggagcc ctccccaacc cgggcgttcc 60

ccagcgaggc ttccttccca tcctcctgac caccggggct tttcgtgagc tcgtctctga 120

tctcgcgcaa gagtgacaca caggtgttca aagacgcttc tggggagtga gggaagcggt 180

ttacgagtga cttggctgga gcctcagggg cgggcactgg cacggaacac accctgaggc 240

cagccctggc tgcccaggcg gagctgcctc ttctcccgcg ggttggtgga cccgctcagt 300

acggagttgg ggaagctctt tcacttcgga ggattgctca acaaccatgc tgggcatctg 360

gaccctccta cctctggttc ttacgtctgt tgctagatta tcgtccaaaa gtgttaatgc 420
ccaagtgact gacatcaact ccaagggatt ggaattgagg aagactgtta ctacagttga 480
gactcagaac ttggaaggcc tgcatcatga tggccaattc tgccataagc cctgtcctcc 540
aggtgaaagg aaagctaggg actgcacagt caatggggat gaaccagact gcgtgccctg 600
ccaagaaggg aaggagtaca cagacaaagc ccatttttct tccaaatgca gaagatgtag 660
attgtgtgat gaaggacatg gcttagaagt ggaaataaac tgcacccgga cccagaatac 720
caagtgcaga tgtaaaccaa actttttttg taactctact gtatgtgaac actgtgaccc 780
ttgcaccaaa tgtgaacatg gaatcatcaa ggaatgcaca ctcaccagca acaccaagtg 840
caaagaggaa ggatccagat ctaacttggg gtggctttgt cttcttcttt tgccaattcc 900
actaattgtt tgggtgaaga gaaaggaagt acagaaaaca tgcagaaagc acagaaagga 960
aaaccaaggt tctcatgaat ctccaacctt aaatcctgaa acagtggcaa taaatttatc 1020
tgatgttgac ttgagtaaat atatcaccac tattgctgga gtcatgacac taagtcaagt 1080
taaaggcttt gttcgaaaga atggtgtcaa tgaagccaaa atagatgaga tcaagaatga 1140
caatgtccaa gacacagcag aacagaaagt tcaactgctt cgtaattggc atcaacttca 1200
tggaaagaaa gaagcgtatg acacattgat taaagatctc aaaaaagcca atctttgtac 1260
tcttgcagag aaaattcaga ctatcatcct caaggacatt actagtgact cagaaaattc 1320
aaacttcaga aatgaaatcc aaagcttggt ctagagtgaa aaacaacaaa ttcagttctg 1380
agtatatgca attagtgttt gaaaagattc ttaatagctg gctgtaaata ctgcttggtt 1440
ttttactggg tacattttat catttattag cgctgaagag ccaacatatt tgtagatttt 1500
taatatctca tgattctgcc tccaaggatg tttaaaatct agttgggaaa acaaacttca 1560
tcaagagtaa atgcagtggc atgctaagta cccaaatagg agtgtatgca gaggatgaaa 1620
gattaagatt atgctctggc atctaacata tgattctgta gtatgaatgt aatcagtgta 1680
tgttagtaca aatgtctatc cacaggctaa ccccactcta tgaatcaata gaagaagcta 1740
tgaccttttg ctgaaatatc agttactgaa caggcaggcc actttgcctc taaattacct 1800
ctgataattc tagagatttt accatatttc taaactttgt ttataactct gagaagatca 1860
tatttatgta aagtatatgt atttgagtgc agaatttaaa taaggctcta cctcaaagac 1920
ctttgcacag tttattggtg tcatattata caatatttca attgtgaatt cacatagaaa 1980
acattaaatt ataatgtttg actattatat atgtgtatgc attttactgg ctcaaaacta 2040
cctacttctt tctcaggcat caaaagcatt ttgagcagga gagtattact agagctttgc 2100
cacctctcca tttttgcctt ggtgctcatc ttaatggcct aatgcacccc caaacatgga 2160

aatatcacca aaaaatactt aatagtccac caaaaggcaa gactgccctt agaaattcta 2220
gcctggtttg gagatactaa ctgctctcag agaaagtagc tttgtgacat gtcatgaacc 2280
catgtttgca atcaaagatg ataaaataga ttcttatttt tccccccaccc ccgaaaatgt 2340
tcaataatgt cccatgtaaa acctgctaca aatggcagct tatacatagc aatggtaaaa 2400
tcatcatctg gatttaggaa ttgctcttgt catacccccca agtttctaag atttaagatt 2460
ctccttacta ctatcctacg tttaaatatc tttgaaagtt tgtattaaat gtgaatttta 2520
agaaataata tttatatttc tgtaaatgta aactgtgaag atagttataa actgaagcag 2580
atacctggaa ccacctaaag aacttccatt tatggaggat ttttttgccc cttgtgtttg 2640
gaattataaa atataggtaa aagtacgtaa ttaaataatg tttttggtaa aaaaaaaaaa 2700
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 2755

<210> 58
<211> 2553
<212> DNA
<213> Human

<400> 58
ctaaaggcct tgcacaacat cagagagttc atactggaga gaaccttaca catttcacga 60
gtatggaaag acctttgctc aaaattcagc ccttgtaatg cataaggcaa ttcatactgg 120
aaagaaacct tacacatgta atgaatgtgg caaggttttt agtagaaaag cacaccttgc 180
atgtcatcat agacttcata ctgtctaagg tttctaatca acaatcaaac cttgcacaac 240
atcagagagt ttatactgga gagaaacctt acaagtgtaa tgagtggggc aaagccttaa 300
gtgggaagtc gtcacttttt tatcatcaag caatccatgg tgtagggaaa ctttgcaaat 360
gtaatgattg tcacaaagtc ttcagtaatg ctacaaccat tgcaaatcac tggagaatcc 420
ataatgaaga cagatcttac aagtgtaata aatgtggtaa aattttcaga catcgatcat 480
atcttgcagt ttatcagcga actcatactg gagagaaacc ttacaaatat catgactgtg 540
gcaaggtctt cagtcaagct tcatcctatg caaaacatag gagaattcat acaggagaga 600
aacctcacaa gtgtgatgat tgtggcaaag tcttgacttc acgttcacac ctcattagac 660
atcagagaat ccatactgga cagaaatctt acaaatgtct taagtgtggc aaggtcttca 720
gtctgtgggc actccatgca gaacatcaga aaattcattt ttgagataac tgttccaaat 780
acagtgacta tagaagatca taaagcttta attgacatta gagccaaata ggcattgact 840
tgagattgag ttgacttaac cttgagttta agaattaatt tacattaaag tgtttatgtt 900
aagaagattg ggccaggtgg gattacaggc gcgagcaccg cgcccggccc ctaagttaat 960

atttcaaaca atcgaaggta aaacaacata ttgtgttggg ccacctgtac tgaacgctga 1020

atcgtttttc ctcttaagtt gaaaatggtt ttaatgcaaa gcgccttttt ttgagcaggt 1080

agagtcacgc atccggcagg cggggcgagc tcccctctgt ctggggcagg gtgggggaga 1140

ggggcaggga cctcggtaaa ggggtggagt ggcgcgctgg ttgccgcggg cactggcaat 1200

tagaagggat tattaaacta agcaaggtcc tgggttgttt gagtggataa tggaaactga 1260

aaggtgacgt gcaaaactgc ctattactcc caggagtgga ggataatttc atatttcatg 1320

gaaataaact cagggcccgg agcggtggct cacacctgta atcccagcac tttgagaggc 1380

caaggaggga ggatcgctta agcccaggaa ttcgaaatca gcctaggcaa catagtaaga 1440

cctcatctct actaaaaata aaaaaaaaca gccaggtgtg ttagtccaca cctgtggtcc 1500

cagctgcctc agcttcccga gtagctggga ttacaggtat gaaccactat gcccggctaa 1560

ctttgttttt ttttttttaga aattaaacct tttttcagct taatgaccca ggggtgtatt 1620

tttgaaggac ttgggagctc tctttgaaag gcaaacaaca agggaaacag tacctttatc 1680

tcagtaggaa attaaataat tcaaacatca aataacttca atttaaggct atggactttg 1740

agataattct gagccttgag aggaatgtgg tcaggcaacc tgagtccagt ggaatgcagg 1800

tgcaacttct aagagttttc ctgtaagtaa ttaagaagac taagtagccc cagagataag 1860

acctcctcgg atcattgtcc cttcttatgt agtgataaag taaccttcct tgaagtgtat 1920

ctatccgtaa tcaatcaagt tgctgcagcc tatgcactgg cccagaataa aaaacgtggt 1980

gattctgcta aagcttctct gtctttccct gtgtgtgaaa tcttaacgtc tctacttggg 2040

aacgctgatc ccattcattt agagttgatg tttccacgtg gctatttcca agctttgcct 2100

tcaaataaat tctgtactta atcatatatt ctaaatttta ttatttactg ctgacatcag 2160

tttctgtcgg attgtaggag cctcaccaga gagggcccct gtcgccatgt tgtaaaactc 2220

acacttgcca aaagttgtgg gttagggttt ctccccctcc ctcaggatga cgctagttag 2280

ctgacacaga tggtcacctc cattaccaag tagagtcagg atgaactatg tgtgactgtt 2340

caactatgtg tcctcttccc tgaggactga ttagtgttta tcttgaaaac atgtccttaa 2400

tgggttgtat agaacactga agcatctgat ttcaaactct tagctctttt cctctatttc 2460

ccatcacatt ctggtctaag gcttatttat taataaaatg atttttattt ctttaaacaa 2520

aaaaaacttt agagcacact ggggtaccgg atc 2553

<210> 59
<211> 452
<212> DNA

<213> Human

<400> 59
gcggccgcgt tgatccacag ggcgctgttc agaaagccca ggaaagcaaa gagccagtga 60

agcctggggg gctggctgtc agatgtggca aaaaaggtca ctgaagccaa ggctgtgcct 120

gcgatcacca ccacgaccca gacgggaacg aggccgccta tctcatagac accataggtc 180

cccgactgca gggtcaggac cacaaccagg gggctgataa ccagatgcag acagttgagg 240

ggccgtttcc agttctggtc atccttgtcc gggtccacga cggggactgt gaggagcagc 300

aggaactcca caggcagctt gaacaccttg agggctttcc agtatgctga tttccttctc 360

cacttcatgt aatccagggg attgagggcc cggaccagga tctgagccgt ggtctcctgg 420

tagaagaaca gcggccggta ctcatcaccg ta 452

<210> 60
<211> 1130
<212> DNA
<213> Human

<400> 60
ggcccttaga gtcttggttg ccaaacagat ttgcagatca aggagaaccc aggagtttca 60

aagaagcgct agtaaggtct ctgagatcct tgcactagct acatcctcag ggtaggagga 120

agatggcttc cagaagcatg cggctgctcc tattgctgag ctgcctggcc aaaacaggag 180

tcctgggtga tatcatcatg agacccagct gtgctcctgg atggttttac cacaagtcca 240

attgctatgg ttacttcagg aagctgagga actggtctga tgccgagctc gagtgtcagt 300

cttacggaaa cggagcccac ctggcatcta tcctgagttt aaaggaagcc agcaccatag 360

cagagtacat aagtggctat cagagaagcc agccgatatg gattggcctg cacgacccac 420

agaagaggca gcagtggcag tggattgatg gggccatgta tctgtacaga tcctggtctg 480

gcaagtccat gggtgggaac aagcactgtg ctgagatgag ctccaataac aactttttaa 540

cttggagcag caacgaatgc aacaagcgcc aacacttcct gtgcaagtac cgaccataga 600

gcaagaatca agattctgct aactcctgca cagccccgtc ctcttccttt ctgctagcct 660

ggctaaatct gctcattatt tcagagggga aacctagcaa actaagagtg ataagggccc 720

tactacactg gcttttttag gcttagagac agaaacttta gcattggccc agtagtggct 780

tctagctcta aatgtttgcc ccgccatccc tttccacagt atccttcttc cctcctcccc 840

tgtctctggc tgtctcgagc agtctagaag agtgcatctc cagcctatga aacagctggg 900

tctttggcca taagaagtaa agatttgaag acagaaggaa gaaactcagg agtaagcttc 960

tagacccctt cagcttctac acccttctgc cctctctcca ttgcctgcac cccaccccag 1020

ccactcaact cctgcttgtt tttcctttgg ccataggaag gtttaccagt agaatccttg 1080

ctaggttgat gtgggccata cattccttta ataaaccatt gtgtacataa 1130

<210> 61
<211> 3323
<212> DNA
<213> Human

<400> 61
tgcttcataa aatttaccta agcaagtggt cttgcttgcc tcaaatccaa gcagtcttga 60

acacttggag gcaattaatg agtatatctt agtcaaaaga attgttggag ctttttatta 120

aagctgcagt ttcagttctg cttttgggga attgtgctat gaaagcagct gccaaaataa 180

gctcatttat tttcttcaat cccactcagt gctcagtcac tatattctgt ttcctttttt 240

tttttcaagt tgcatatttg gtttcccctt atgattggga aagatgaatt ttcagcagaa 300

aacagtgttt gttcactttc aaagagtgat agtttctaaa acatttagag caataaatat 360

tcatcagagg taccaagtaa gccagcagaa gagttaaggg ttagagaaat cccttatttc 420

atgtcttgac tctaaaatga tcaaagtact tttccttgta atgtggattt cttcttatgc 480

ggatatgcaa aaacttcagt tatacgtagt aatgctagca ggtaatttta gtggacattt 540

tataacaact gtcactttgt tttgccacat gtagagtttg ttcagctatt ttccagatat 600

ctccccacaa aaggaggcaa agggtaccag cttttcaatg agcattacct attacttggc 660

aaagatgatg aagactctat taatagttca tttgataaat gttgacataa ccaacaatag 720

agattaggaa gttagtttta agaaatcaat agcatataga cattaccctc atggagtttg 780

tattctacta cttgaactga ttgtagctat aaaagcatag ttagatagct gaatagttag 840

atcataagca aagaaggcca gaacacatct cttatcaaga aatcaatgaa tagtttatct 900

catttttaaa gcaactttat ccttctttaa ttccttcctt tcttctagtg caaaactact 960

taataaggtt ggtgtttagg ttagtgttca caccattcct catctggtgt gaattacctt 1020

ctctttcttt actatttact accaacctag tacatgtgtt gactgaattc ttttcaaaca 1080

atgttgagtt atcatggtgc acctaataaa ttaacaccac agattacagc atccttgctg 1140

attttctcag caaagccaga ttagatggaa ataaacaaag aaaatgatcc tagagtgaat 1200

ttttctagaa aatatctatt atgaaccatg ctgtttaaag tattagcttg aaggtgatgg 1260

atccagctat tcagaaaata actttcatat aaccatgatt ttgcacagta tgaggtctta 1320

aatgtgtgga aagagataaa ttttttatca ttaccacaaa ccccttttaa agattcaaag 1380

gtggaagaaa gtgatttatt ttttctcttc agcatacata tataaaagac ttgtcagatg 1440

tttaatttgg ggaggttgat aatgaaacat atcaacagag tatagtagtt atagtagtgt 1500
ttgtgggtaa ataatttcct ggggtcagac atatataaac atatttgctt caaaatgata 1560
aaggcatgaa atcagtctta aaaattgaaa tgggggtgat gggggagaaa aagaagaaca 1620
aatttgaagt gccctttcaa atctgctgga tacaagtatt gaagttttaa gtcatcttat 1680
tctgtctgaa agtgtatttt tcattctaca atagacccaa tcaacaagac gtataacttg 1740
agttgcatga tgttcagttt atgtaatcta ctgttgggat ggtaagaatt gatgtaggct 1800
gtggtgtaag aatgaattaa aatatagttt cactggcttt tctctacata tccactatca 1860
caatggctag gtttcctgtt gctcactgtt ggattctgga gaaaaattta atgaaagatg 1920
atatcagagg aagaataagt ggaggtagag aagaaaggag tgatagagga ggggaaaaaa 1980
acaaaacata tttttgtgtt atccaaagga gctttttcct tattctgtca agcattgaga 2040
tcttcttcag ctttcaatgt agttgctaaa tacaaataat gctactaggt agtgactaaa 2100
tatagcaaac acttcatcag atattagaat taggtcacac tattgaggtt ataatctgaa 2160
ggttgtgtta catagaaacc actttagatt attatcaact tgggctaggc tttattttat 2220
aatagcatag taagtaatat ctattgtgtc atttcttcaa ccattttatt ctaagatcca 2280
tgaagcttct tgaggccaaa taaaataata agtttagaca agaagtagat tgtgactttt 2340
tttcccttag agatactatt tactatctcc tatcctgata ggtggaaggt ttactgaatt 2400
ggaaattggt tgactattag tttttaacta aaatgtgcaa taacacattg cagtttcctc 2460
aaactagttt cctatgatca ttaaactcat tctcagggtt aagaaaggaa tgtaaatttc 2520
tgcctcaatt tgtacttcat caataagttt ttgaagagtg cagattttta gtcaggtctt 2580
aaaaataaac tcacaaatct ggatgcattt ctaaattctg caaatgtttc ctggggtgac 2640
ttaacaagga ataatcccac aatataccta gctacctaat acatggagct ggggctcaac 2700
ccactgtttt taaggatttg cgcttacttg tggctgagga aaaataagta gttcgaggaa 2760
gtagttttta aatgtgagct tatagataga aacagaatat caacttaatt atgaaattgt 2820
tagaacctgt tctcttgtat ctgaatctga ttgcaattac tattgtactg atagactcca 2880
gccattgcaa gtctcagata tcttagctgt gtagtgattc ttgaaattct ttttaagaaa 2940
aattgagtag aaagaaataa accctttgta aatgaggctt ggcttttgtg aaagatcatc 3000
cgcaggctat gttaaaagga ttttagctca ctaaaagtgt aataatggaa atgtggaaaa 3060
tatcgtaggt aaaggaaact acctcatgct ctgaaggttt tgtagaagca caattaaaca 3120
tctaaaatgg ctttgttaca ccagagccat ctggtgtgaa gaactctata tttgtatgtt 3180

gagagggcat ggaataattg tattttgctg gcaatagaca cattctttat tatttgcaga 3240

ttcctcatca aatctgtaat tatgcacagt ttctgttatc aataaaacaa aagaatcctg 3300

ttaaaaaaaa aaaaaaaaaa aaa 3323

<210> 62
<211> 737
<212> DNA
<213> Human

<400> 62
gggaatgccc taacaacacc catgcttgtg ttgctgggag ctgacattca agaaaagtgc 60

attaaaaatt ccttgagaag gcatattctt ttgagagccg taaatgaaaa gtgcattcac 120

ggagaacatg ctcctttgtt gtgagaggaa agaaaggact gttgttgcct ttaaggaaca 180

ggtttcccag ttccccggaa tgtcagggtc acatgaggaa tgggtgagca cttagggcca 240

agattgtcgt gtgcttggcc cggcagcttc tctctaagtg acctctccag catcactctg 300

tgccagtgct catatctgag gccacttgag tgtcacgagg cagagcctgg aaacattagc 360

tttggaaacc gttccttcct ttttatgtgg aggaaagtaa ggtttcacaa gacacctaag 420

ctggacatgg tgatgtgcca cttggatagt tcccaaaagc agaaagcagc aggacatccc 480

agtaccccac ttctccgtgc cgtgtacttt cagggaggtt ctcgaaagct agcttcttta 540

ccgatgattt gtctatgtac tggttatggt ggaaaacctt gcatttatta cctggtccta 600

tctcagagtc ttctattcag cattcaatat gacttctaat gcttctaatt ggactgtatg 660

gacagagaac cggtttgtca ttcacgggcc gcggatataa tcagagcctg gaatccgcca 720

aaaggtcggt gccggat 737

<210> 63
<211> 3780
<212> DNA
<213> Human

<400> 63
tactggacaa acatttcctc caaggacaca gctctctgcc tccatgtcac cacctttgaa , 60

ggactgactg attccctcgg ctggtgccag tgcctgctcc tgccatgggg cccgcgggga 120

gcctgctggg cagcggacag atgcagatca ccctgtgggg aagtctggca gctgtcgcca 180

ttttcttcgt catcaccttc ctcatcttcc cgtgctctag ttgtgacagg gaaaagaagc 240

cgcgacagca tagtggggac catgagaacc tgatgaacgt gccttcagac aaggagatgt 300

tcagccgttc agttactagc ctggcaacag atgctcctgc cagcagtgag cagaatgggg 360

cactcaccaa tggggacatt ctttcagagg acagtactct gacctgcatg cagcattacg 420

aggaagtcca gacatcggcc tcggatctgc tggattccca ggacagcaca gggaaaccaa 480
aatgtcatca gagtcgggag ctgcccagaa tccctcccga gagcgcagtg gataccatgc 540
tcacggcgag aagtgtggac ggggaccagg ggctggggat ggaagggccc tatgaagtgc 600
tcaaggacag ctcctcccaa gaaaacatgg tggaggactg cttgtatgaa actgtgaagg 660
agatcaagga ggtggctgca gctgcacacc tggagaaagg ccacagtggc aaggcaaaat 720
ctacttctgc ctcgaaagag ctcccagggc cccagactga aggcaaagct gagtttgctg 780
aatatgcctc ggtggacaga aacaaaaaat gtcgtcaaag tgttaatgta gagagtatcc 840
ttggaaattc atgtgatcca gaagaggagg ccccaccacc tgtccctgtt aagcttctgg 900
acgagaatga aaaccttcag gagaaggaag gggagaggc ggaagagagt gccacagaca 960
cgaccagtga aactaacaag agatttagct cattgtcata caagtctcgg gaagaagacc 1020
ccactctcac agaagaagag atctcagcta tgtactcatc agtaaataaa cctggacagt 1080
tagtgaataa atcggggcag tcgcttacag ttccggagtc cacctacacc tccattcaag 1140
gggacccaca gaggtcaccc tcctcctgta atgatctcta tgctactgtt aaagacttcg 1200
aaaaaactcc aaacagcaca cttccaccag cagggaggcc cagcgaggag ccagagcctg 1260
attatgaagc gatacagact ctcaacagag aggaagaaaa ggccaccctg gggaccaatg 1320
gccaccacgg tctcgtccca aaggagaacg actacgagag cataagtgac ttgcagcaag 1380
gcagagatat taccaggctc tagcaaccca gaagacaacc ctgggtagcc tgtgatcagt 1440
gtctggagac gtttcttctg tggaagagaa gaagtgacac aaacctatac ttcatatgct 1500
gctttagtca cctgaagatg gttggagagg ccctgtcgac tgttctccca gttgttcagt 1560
ttctgagaca gagaggtacg gactaggctg cacctgagtg tgcccctgcc tgccagatgg 1620
acaggtacac ccaagcacat ctccctgctg caccctcacc acccacaaaa gatcccagct 1680
gtcagtggtc tcatctcatt agtgaggaaa gccaagctgt atggaaaagc tgcactcacc 1740
aaggaccaca atgcccccgg cctaaagtac tgccattcag aaaagcaggt ttttcttcct 1800
ctctttcctt ttctctgtct gctactgact ttaaggcttt ttccccсttg aaatgtccag 1860
attcctgtgg ttcatcccaa ggaaattttc acacaaagct tggcctttgc cctcaatata 1920
ggtgttttag gatggtgaca aaccatggct gctgctttct gcccagctcg ccagtcctcc 1980
ccaaagagtt gcgcatcagc acctggggat ctggaccctg cgggtgaagg gatggggagg 2040
gacgtccctg gagtctcttc tgtctttgtt ccttcttatt ttggcattcg atatcagcag 2100
cctctcccca aagtacttga agtcagtttt agatgcttta ttttattttt ctagtcaaaa 2160

acgtgtttcc cccagtgttt gaaaactcgt ccgaatcttt tcagtatttt ccatgagtat 2220

tgtggtactt ctagacttgt ttaagcccag aactcattcc ttcaaaacag agagccttaa 2280

tctttatgtt gggacacaga ccacatattt ggacggcagc catgcatcca tcgctgaagg 2340

gctgtggaca tgaatgtgta tttcccatgg tctccgctgc ccacaccaac agtgtggcat 2400

ctcataagtt aactgctacc ctaaggtaat ctaagattaa aatgtaaaca tttatttttg 2460

ttatgtaagt ttataagatg ttttatgttc aatgcctaat ttctcaaaag tgccagaaaa 2520

aaatgtatat tagctatttt gattttatgt acaatgattt atactctcct tttgaaaaga 2580

taccataaag cacataagct agatcactac aaggagctgt tatctttttt ctaatcaagt 2640

gtttaaaaca ctgatggttt ttaaagactc accttttttaa atggtacttg gagctcctga 2700

ttcaaattac ctagaccccc tagagaaata aatggaatat acataaataa tcattttcag 2760

tggtttatgg tgggcaatat tgcaatattt gaaatggtaa aaatggaaag aagaacaaaa 2820

tatgatgaga ggtggctgtg aattataaac ctcataaaag tgtcataatt ccattaaggt 2880

ttaattatat tttttcagaa aacagtgatg aattctgtag tccagtgctt gccaatgcaa 2940

attgcctatt ggaatcttct tcctatattt tacaaacatc agtggctgaa atagctcaga 3000

gtaagagctc agcctggttt gaatttaatc atctctttag atcttataag gccagcatta 3060

ggaaacttgt tcacttttca ttttcaaagg agcctagttg aagtgctatt atgagtgtgg 3120

gctatggaaa gacagctttt cctacactga taaagaaaaa aaatgaggaa attatttcat 3180

ccccttgtga catctgtgac tttttggatt taataatctt gctgtttttc ctctttatga 3240

caaagaatat aattgggagg atgaagtgtc ttaaaaattg tagagaccag ctcactggaa 3300

tgtttttcca tccctgtatt catggcttga ctttgtgact gctctacact gcatgtctga 3360

cattgcagag tgagctatgt tgaggtaaac tggttggttg tcattatttt gcaatcagcc 3420

tggtctctcc catgaagatg tcgtgtgcat aagcacaatc atcactgatt agaagatcac 3480

agcagaatac ccttggatta gagagaagtt cgtaccttgc atttctctga attctagtct 3540

ctcataagca ctgctttgct ggatgatttt cactgctttg tgttaatgac tttgagcgat 3600

ctctcacatg atggggttct ttagtacatg gtaacagcca tgtcatctta cacacctagc 3660

attgtgaatg ctgtagtgac atcctttata ggcaccttac agctcaaaac ttttgtttca 3720

tttcatgcct tacttatcaa aaaggcagga aagtaggtat gatctctaaa gtaaaaaaaa 3780

<210> 64
<211> 437
<212> DNA
<213> Human

<400> 64
gtgatggtgg gtttttgttt tattttttat aaaacacttg cactcaagaa catacaaaca 60

gtggccacca atccccaccc ctggggctcc ggggagcacc atggcttgtt tgtggctgtt 120

ttcctctgtc ccttccctgg catctggtgc cagagggcag gtgcgggggt cctggggcgg 180

gtggaatttg tacagcactt tcatggggag atggtcacaa gaaaggaaac caggacaaga 240

taaggactaa gtctagggca cccacaaaga tggcagacga agcccatgaa agggcctgcg 300

acagagtgaa gagacggatg ggcctgcgtt ggcctcagct agctctggag gctctgtggg 360

ggagggggcag gtgggccttg cagtcaggat tcggtaatta cactttgctc acgggtagca 420

ccttcggagt cctcctg 437

<210> 65
<211> 566
<212> DNA
<213> Human

<400> 65
tacgttttat caactgccaa gatcctttat tttttccagg ccccttcctg cccactccac 60

atcggggcag ctccagcata agggagatga catgatgaag gggctaagag tagggcctgg 120

ccagcatcca ctgagggccc aaccagggaa cagttgctag ccgctctctt ccatgcagct 180

ggagcactag caaggccttc cagaggctcc cagggcgacc tccacatcac tcccgcttgt 240

ctctgccctc cagggtgctc cgggcctcct ctccctgtgt accctagagg tgtgagggcc 300

acagtcctcc tcaggtgaac ctccctcccc aagcccaggg ccctagcaca ggctgcagtt 360

ggacggcttc gagctgcggc tctgggcctg ctgccgctgg tattctgcct cactggctga 420

cagtgcttgt gctaaagcta ggtcttcttc ctcctgacaa cttggaaact ggggtttggg 480

ttctgccagg gacatttcca gggcccctgc agagttcatc ctcactcagg ccatttgcaa 540

gaatcactgg aggggctgtc agaagg 566

<210> 66
<211> 566
<212> DNA
<213> Human

<400> 66
tttttttttga gcaaagagct ttttattcaa agaaagaggc aaattgcacc caatctctct 60

ccctgtaaga tctcatctgg ttttgacatc agttgcaatg ctttcagtct gaggctaagc 120

aaaatgttat gctgtgaatg gtcaccacag agagaccact gtgttgctgg tgtggggagg 180

cgaggctcag ggttggacag gttaattacc tacataaccc tggctgtggc ccagcccagc 240

acctcccaaa acagggactg acatggctga ggtctacctt ggagatgggg tcagtgaaga 300

ggggaggcag ggtcagcctc tgtgcaagta aaatgccccc tcaccccagc cttcctttcc 360

agagcaacca atctgaaaac agaattgcct ttggggctgg tgttgtacct ctgctttcag 420

gccaagatgg attccctaga agaggagttt gaagcccaat gtgcaaggac atttctcaag 480

ggccatgtgg ttttgcagac actgctgtcc tcaggcctga actcaccatg gaaacccatg 540

tcagcaaaca gtgaccagca aatcct 566

<210> 67
<211> 3510
<212> DNA
<213> Human

<400> 67
agaagccgtt cagatgtgag aactgcaatg agcgcttcca gtacaagtac cagctgcggt 60

cacacatgag catccacatt ggccacaagc agttcatgtg ccaatggtgc ggcaaggact 120

tcaacatgaa gcagtacttc gatgagcaca tgaagaccca cacaggagag aagccgtaca 180

tctgcgagat ctgtggcaag agcttcacca gccggcccaa catgaagcgg caccggcgca 240

cgcacacggg cgagaagccg tacccgtgcg acgtgtgtgg ccagcgcttc cgcttctcca 300

acatgctcaa ggcccacaag gagaagtgct tccgcgtcag ccacaccctg gccggcgacg 360

gcgtccccgc tgccccaggc ctgcccccaa cccagcccca ggcgcacgca ctgcccctgc 420

tcccggggct gccccagacc ctgccgcccc cgccccacct gccgcccccg cctccgctct 480

tccccaccac tgccagcccc ggcgggagga tgaacgccaa caactagctg ccgagctgca 540

cccgtgcacc cgctggggcc tggagtcagg gcccactcca ggagggaccc actgccttcc 600

cggggagcac agtagtgcgg gcctgggccc tgctccacct ccagaagtgg ctggatgtac 660

cctgcctgag gccccgacga ggaggggtat gcaggctggc aggccccaga gctggtggag 720

ggcatctcac tcccaagtgc ccccccttc tgtgactcct tgaagccttt actttttttt 780

tttttggaa gtgaaggaaa aagaaactat ttacagcact cccctccagg tgagggggt 840

gctgggggtc tgcagcagaa agaaaggggc ctgggcagca ggtgtggcca gtccctctgc 900

caaggcctgt gccagagggg ttggccagtt ggagcctggg tcagcctcag cagcctatcc 960

ccatgtcctc tatgccccta atttgcttcc tcatcttgga gggtttgggg agaagttggc 1020

gtgccacccc cacaacccct gaggaggtgt agacccagtc tgagagccgc aagcactgag 1080

gcagggcctg agactggacc tgggtgagcg tggggggtgg agggtggcga ggtgcggaga 1140

ctgcagacca gtgcttcact gtgtggagtg gggcaggcag gggctggacc ccagggactt 1200

gccttcccca cccactctgc tgccagcagg cccagggatc cctgacctgc accaggtggc 1260
accaagggtc ctgagtcctg gagatgtccc cagaagctgc tgtgcctcac agcgctgtga 1320
gccagaccct ccttgggcag acaggctgac tggcagcacc agctttgggg gcagagtcct 1380
aggatgaggc ttgggcagtg ctggtagggt ttcaaggtgc tattagtggg gcaggggcag 1440
ggcggctgct cacagagcac cccagttcct caccagctac tctggccata tatcccacac 1500
cagaaggaac aagtgtggct gtgtccatct ctgctccccc aaaggcccgc tctaggcctt 1560
atcctccctc taggtcctgc cacaacctgt ccctggctgg ctccagcgtc ctcgtccctc 1620
ctgggcctgt gcaccggtgg gtggggcgcc catagcactg ccggtaaagg agcctgcatg 1680
ttcaggcccc tcgggggatt gggggggactg gggaggcgca gcctagaccc aattgcttgc 1740
ccccatgagg ctagcactaa taggaaaccc ttttttgttg tcatttaatg tctttattcc 1800
tgcctttaat atggggagga aggttccata agctacatgt ttcctagtta agctctttcc 1860
tattgtgttt atacagtttt gtttgttata ctctttgcac cttaaacccc caccactccc 1920
cgacactatt gccttcccag catggctgga gtgggaagag gcttgggccc cgggggaatg 1980
gttaggggga ctgaacccct ctgaccttat gaggcccatg gcactggggc agggagctgg 2040
ggacatttta atcatcaata aacgaagcac tttattctgt acagatttgg gcaggcccaa 2100
ggtgcccgag tgatctgagg atttataatc caagccacac caccctggtt gttctctggg 2160
cttggagggt acagtgccag cagcttcctt gcccaattga tgttggagct gtagacgtac 2220
gctcaggcgc tcctgctgtc ctgggggaga gaaggttcgc ccctccccga ggaagaaggc 2280
ttctggtcag gacccccacc ccaaggctgg ggactccagg ctcctgcttt actgtagctc 2340
tttttcttcc ttgcactcct tgatctttgg gcttccgtga tgtcctcagg gtcccccccт 2400
ccctgttgct atttttaatc tctagtccca gtgcctggca gctctttgga gctggctcac 2460
attttcccaa aaaaaagttg atctctccca gtgggctgta ggcagggtcc tccatgggtt 2520
tccaaccccc atcactggca ccaggatctc ccacaggcac tggtggtgtc atcacctgct 2580
ggccccacta cagcctgagt aggcctgagt ggccgtggcc aggctgagac ctgtcaggcc 2640
atactgacaa gcagaggtca gagacactgg tggggagctg gcaatgaaac cctgtcctgg 2700
gacatgggtt tcatgttctt gtacacttcc cctctgggat caggtgaggg gtccagacag 2760
ctgaccagac agcttgacag ctggtcaaga cggtcacggg agctctaggt gggcacaacc 2820
aacccctctc ctgggaggcc cctgccccac tggggatagg agcctgtgtc cctggtgcta 2880
agcactctct tcacttgggc cattgttggt gggggctcct ttccggccag accacaaggc 2940

cagaagcaat aatggcacct cagcagttcc agtatggata ggggttcctg ttttactagc 3000

ttttacatct ttttatttaa aacaaaacaa cacaaaaaaa caatgtgccc ccagatgtca 3060

gaatgaggcg actagggcac catactcact ttccagggct gggggaaggg ggacgcagga 3120

tcatcccctc ccaaggagat ctgtgggggt cccaccgtcc atctggactt ctcagcctgt 3180

ttggctagaa ctcaggcctg gagtctgggt ctgccccctc cccggctcct tggggctctc 3240

tggtctcagg ccagctggcg atgggtggct agagtgatga actcaagccc tgtggccaca 3300

gttctgggag ccttcaaccc tggctcatgc tgccatagtc tccacggtgc ccttcacaga 3360

gggcttggta gtggcagaat ggccatgccc aggtgtgtgt tgagaccatt gacaactgct 3420

cgtgtacagg caccccacag ccccagagca tggggcacag caggcatgcg agtgagagga 3480

tgaaggggaa taaagtcagt acaactcgtg 3510

<210> 68
<211> 2800
<212> DNA
<213> Human

<400> 68
gcctcccccc ggggcactga ggcctcccca cctcagaaca acagcggcag tagttctcct 60

gtcttcacct tccgccaccc gcttctgtca tctggtggcc cccagtcccc actccgagga 120

tccacaggct ccctgaagtc ttccccgtcc atgtcccata tggaggccct gggcaaggcc 180

tggaaccggc agctcagccg tcccctctcc caggctgtgt cattcagcac cccctttggc 240

ctggacagcg acgtggatgt cgtcatggga gaccctgtgc tcctccgctc tgtgagctcg 300

gacagcctgg gcccccgcg tcccgcgccg gccaggaccc ccacccagcc acccccggag 360

cctggtgacc tgcccaccat cgaggaagct ctgcagatca tccacagtgc cgagccccgg 420

ctcctcccag atggggcggc cgacggcagc ttctacctcc actcccctga ggggccctcc 480

aagccatccc tggcctcccc ctacctgccc gaggggacct ccaaaccact gtccgacagg 540

cccaccaaag caccagtgta catgccacac cccgagaccc cctcgaaacc atctccctgt 600

ctggtggggg aggcatcgaa accgccagcc ccatccgagg ggtccccgaa ggcggtggct 660

tcgtccccag cagccaccaa ctccgaggtg aaaatgacca gctttgcaga acgcaagaaa 720

cagctggtga aggcagaggc tgaggccgga gcggggtccc ccacgtccac tccggccccg 780

ccggaggccc tgagctcgga gatgagtgag ctcagcgccc ggctggagga gaaacgcaga 840

gccatcgagg ctcagaagcg acggattgag gccatattcg ccaagcaccg ccagcggctg 900

ggcaaaagcg ccttcctgca ggtgcagccg cgggaagcct ctggggaggc ggaagcagag 960

gcggaggagg ccgattccgg tccagtccct ggtggggagc ggcccgcagg cgagggccag 1020
ggtgagccaa cctcacggcc caaggcagtg accttctcgc cagacctggg cccggtgccc 1080
cacgaggggc tgggggaata caatcgagcg gtcagcaagc tgagtgccgc cttgagctcg 1140
ctgcagcggg acatgcagag gctcacggac cagcagcagc ggctcctggc cccgcccgag 1200
gcccccggat ccgccccacc acctgctgcg tgggtcatcc ctggccccac gacggggccc 1260
aaagctgcat cccccagccc cgcccggcga gtcccggcca cccggcgcag ccctgggccc 1320
gggcccagcc agtcaccccg cagcccgaaa cacacgcggc cagcggagct gcggctggca 1380
cccttgacca gggtgcttac gccaccccac gacgtagaca gcctccccca cctgcgcaag 1440
ttctcgccga gccaggtgcc cgtgcagacg cgctcttcca tcctcctggc ggaggagacg 1500
ccccccgagg agccagccgc ccggccgggc ctcatcgaga tcccgctggg cagcctggca 1560
gatcccgccg ccgaggacga gggagacggg agccccgctg gtgctgagga ttccttggag 1620
gaggaggcgt cttcggaggg ggagccccgg gtggggctgg ggttcttcta caaggatgaa 1680
gacaagcctg aggacgagat ggcccaaaag cgggccagcc tgctggagcg gcagcagcgg 1740
cgagcagagg aggcgcggcg gcgcaagcag tggcaggagg tggagaagga acagcggagg 1800
gaggaggccg cgaggctggc ccaagaggag gccccgggcc cagccccgct tgtgtccgca 1860
gtcccgatgg cgactccagc ccctgctgcc cgggctccag ccgaggagga ggtgggcccc 1920
cggaaggggg acttcacgcg gcaggagtac gagcgccggg cccagctgaa gctgatggac 1980
gacctcgata aggtgctgcg gccccgggct gcggggtccg ggggtccagg tcggggcggg 2040
cggagggcca cccggcctcg ctcgggttgc tgtgacgact cagccctggc acgaagccca 2100
gcccgcggcc tgctgggctc tcggctgagc aaaatctatt cccagtccac cctgtcactg 2160
tccactgtgg ccaacgaggc ccacaataac ctcggggtga agaggcccac gtctcgggct 2220
ccctccccgt caggtctcat gtccccaagc cgcctgcctg gaagccgcga acgggactgg 2280
gaaaatggca gcaatgcctc ctccccagcg tcagtgcccg agtacacagg tccacggctg 2340
tacaaagaac ccagcgccaa gtccaacaag ttcatcatcc acaatgccct atcacactgc 2400
tgcctggcgg gcaaggtgaa cgaaccgcag aagaatcgca ttctggagga aattgagaaa 2460
agcaaggcca accacttcct gatcctcttt cgcgactcga gctgccagtt ccgggcgctc 2520
tacacgctgt cgggggagac agaggagctg tcgcggctgg cagggtatgg gccccggacc 2580
gtcacgcccg ccatggtgga aggcatctac aagtacaact cggaccgcaa gcgcttcacc 2640
cagatccccg ccaagaccat gtccatgagc gtcgatgcct tcaccatcca gggacacctc 2700
tggcagggca agaaacccac cactcccaag aagggcggcg gcacccccaa atagccccac 2760

ccgggcggtc cacgggccgg gccctgtgtg ctgcggccgc 2800

<210> 69
<211> 1634
<212> DNA
<213> Human

<400> 69
aaaggtaaga gcactttatt cttatttgaa ccacactgta ttgttgatta ccgagtgtga 60

aggtagtatg ttcagagtct tgttttatgc ctttgtagct gtgttgccag catttgaagg 120

taactcctcc acataagcgg caggaaaatg gccttttttc ccattcaaag atccaaacca 180

ccatccttct tctttttct cgtgtataat cacaatgtca ccctttcca aattcaactc 240

atcatcttgc ctggcttgaa aagaatacaa ggccttgcaa agtctgctgc tgagctgggc 300

tgcaccaggg gctggagttg aagaacctgg attgctctgc ccaccagaag atgccttgct 360

cacaatattc tctaatctct tcattaaaaa aggccgagat attttcacat agctatgagt 420

atgctccttt tccctccacc tgaagatgga attactacaa ggatggctgg gttgaggtct 480

ttgctcaagt tctgctaaca ttgatgacag tttgtaggag ttcgcttcca aaaggtctag 540

tttcaaattg ttctcatcca ttaacgctgc tgtgtctttc tggctctttg catcagagaa 600

ggaggaggtg ctggagtacg ttttaagcat tcgttccagg ccttccttgt cttttgaggc 660

tttttcaatg tctctctgca gtctcaataa ttttggtttt agtaaagact ttcgtctctc 720

tttatccatt gcactgttag gatcttcttc aaagtaatcc gttaacagga actcagattt 780

gttttctgta gataaaattg cagtttcttc cattacagcc tggatatctt tttcaatgtc 840

aatcttgctg atggcacagt gaatctgcgt gtggcatgtg gtcagggttt ggccaaaaag 900

agaaatatgt tggctgtact ggtttaagtt attgcataaa agttgaattc tttccttctc 960

cagctccaga atgctctggt agcagttctc tagtgtgttt tcccatttca gtctggtaga 1020

ataacccgcc atgttttttt ggtagtaatt ttcatcttcc ttttccaact tttcagttga 1080

ttttgtcagt ttattgagga gcttccgctt ctccttctca gtcatagatt gcttggagct 1140

ttctacaagc tggaaaagtg cttcatgttt cttggtacta accattaatt tcttcttggc 1200

cttaatttgc tgattccagt tgctaatgac aagatttgct gtcttttcaa cttcattgtc 1260

aagtgatttt ctcttcttct cttgtacatt taggacttga taagtcggtt ttattgcttc 1320

caattcaatt gctttgccaa gtttttgatg caggtccgct gtggatttca ttccctctga 1380

ggcccaggcc caggcactgc taacacaact ttttctcgtg ttctgtaatg ctttgctcag 1440

cttgcttgcc agtttctgaa gtcctttggc atagctaatt tccaggtttg ccctttgctg 1500

aagaacagat gtgacctgtt tgcagaaatt ctctccattt tgagaaaact cctttaggtt 1560

cttgtatact ttattatacg gacaatctgt cagtgggtcc ctcatgttga aatgtgtctg 1620

gcttttgtcc tttc 1634

<210> 70
<211> 774
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (465)..(465)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (509)..(509)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (617)..(617)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (636)..(636)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (667)..(667)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (693)..(693)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (740)..(740)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (762)..(762)
<223> n is a, c, g, or t

<400> 70
accaaaccaa atcattttat tgtgcaattt ccttctacca gaaaattact aaaaatataa 60

atattaactc tctaaaaaat actcagaata gatctgtaat cttcctcctc ctcctccgaa 120

ctggagccaa tcttcttctt taaacgctga tggattgcat acatgtatgt cttccatatc 180

agccacatac acaacattca gatacacttc cctctgtgca gggggataca ccagcctcct 240

gccaggttct ggaagctcac cttataatct accaggataa agctgtgtgc tgagtaggag 300

gttatggtgg ggttggggag taacaaggag ataaaagacc ttgtggtccc aacttcctta 360

tgtggacaga gaagataggt cctttactcc tcctcattac cctgccctct catggactgg 420

gctaactgaa ggccaagctc ccagagaagc tggactcact gtgtnggatt actgagggtg 480

tggctgccag gctacagtca caggaaggnc agactgttga gatggacatg gaaaccaggt 540

gaggcttgga tggaaagctg gtctgggcca agggctctgg caggatgagt agtaagctgt 600

ttcctggctg ggctttnggc agcccctaga ccctangcac caggtactat gtgcagcatc 660

ttaagancca gacaccagtc ttcagagagc ctnccgaggt agccgcaaca ttcctgcagc 720

aggggacggg caggttgtan gcagttagat tggagccagg tnccatggca ctgt 774

<210> 71
<211> 578
<212> DNA
<213> Human

<400> 71
tttttttttt tttttttaca tgcaatacca caaatttatt ataatacaca gggaaaaaca 60

aactcaaact ttgacaacat ccacagaatg ttccagtctt taaaaagtta gcagaaataa 120

agggtaatgg aaagaatata atctcgtaat tttatactta aggctgtaaa tggcaaagtc 180

ccatagatat ttaaaaatct atatttgtat ttatttataa tatagatata ggccctcaag 240

gattcataga gatttatgta ataaactaga ttttggtact atttatttg ttgttgttgt 300

tgcttgttag gtaagcaaac ccaaacaaat taagtcctga aaagtgggat gaaatcccaa 360

aggaactcta tgagaccaca cagaactctt ttaataaata tggcccatac aaattccata 420

tccagtgaaa atcattttga tccacaatca tgttgatgtt tctatggagg atacttctag 480

cagctgtgat ttcttttgta gcattctggc tctccacttc tattcatata attgagtatg 540

tgttttatta catgttagct tataggcaag ttaaacat 578

<210> 72
<211> 475
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (285)..(285)

<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (361)..(361)
<223> n is a, c, g, or t

<400> 72
gggtttgcac agtttattaa gataatcaat caatttctta agttattcct ttgttaacca 60

gacagcatct ctggagagaa aatgcactct ctgtgtagat acataaaaat acatcagtca 120

ttttgcccct cctggatgtg aacggaatct cccctcctca cctccacaga gggagctcaa 180

gccccaggga accttcccct cccctttttat gcattaccag gggagtggca ggggcagccc 240

ccaactgtgg agtgcattca ggtctgaggg gggaggaagg ctcanagggg catctcccca 300

gcaccctgcc acagtgctgg cttctggggt gtttgttcag cggcctgctg ggctgcccca 360

ngctgggggc tccccccagct ccccgtgcat cctggcttgt tccacggagc cctgagccaa 420

gtctttgtct ggctcatgtt cctctcacaa catcccacag gcaggggtga gcctg 475

<210> 73
<211> 512
<212> DNA
<213> Human

<400> 73
catgtaaaac tgacttttat tacaattaaa aaagaacaaa gacaatttga taagtgcctt 60

taattacaac atacctgcta tttacatgta atcatacttt tatatatagc ttgaataagt 120

tttattacat gtaaactata agatattaca agttaaactc cagtcttttc tggatattca 180

attgaaatac tactggcaga aacatacaga aaacaaatac ccatttcagt tcctcaggta 240

ccattactgg ttgaatgatc aagatctggc cacagaagag aagtggaaat atgcatcaaa 300

acaaaactta ttcttaacat gactaacagt attgttattt aaaccctaaa cataattaat 360

aattggatca ttaaaaacac atcttcaatt tatatagcac ctttcttccg aagagttgaa 420

agcattcgtg cttatctcta ttatttcgtt tgtccccata acatctctat gaggtaggca 480

atggttagta tcattatccc cattttgtat at 512

<210> 74
<211> 668
<212> DNA
<213> Human

<400> 74
tttcaaaacc agcaaaaatt aaatttaatt gggctcaagt ctgggcagtt tgtccttcct 60

caggaccagc cgtcagcagt ccctgacgaa agcaccccat tctctccaca gacagctggt 120

tccaaaagga ccctctgagg ctggtcttcc gggtaggatg tgctgtggga gggttctgtt 180

tccgaggagg agaggcgcga cacagcgtgc aaggacctgc agcaccttcc acgcagcacc 240

ccctgctcct cctcctcagc ccctgccggg ctctgactcc taaagtaagg caggagcttc 300

ttcaggcccc tggctgagga agagccacag ccaccctaaa atggcttcgg gggcatgcag 360

ccctccatct ccagcagctc tggccatccc tcgtatttgt tggtgtctgg gctgttcttt 420

aagaactgct caaaggggct gttacccctg aggtctttgg ctcctatgaa gacccagctg 480

tcccggaagc ccagttgttt tgcgtaggaa ctccccaagt cagagaagag tttcctgctt 540

tcatcgatca ttttggtcgc tggatcgtcg taggaggcca ccaacaccag tgcaccccgc 600

ggaaatatct tatggaattt cactaggtgc ataacttctc ctaagtgcat gtcaaatgcc 660

tgctggcg 668

<210> 75
<211> 568
<212> DNA
<213> Human

<400> 75
aaggaataag gtgaattttt attaagtgaa aaaaatcaat aacaatatag gaatgatcac 60

atctatacaa atacattgct acatttctac atataaaatg tataggaaaa agtctgaaag 120

aatgcacacc aaattattct gtttttagga aaagcagtag gattggtcag ggcatggaat 180

gtcggctaag tgaagtgaga tttaaaattt ttattctaca tgattttcta gtgttgggaa 240

tttttgacag tgagcataca tgcacttatt acttgcataa ttctgaaaac tattttaaaa 300

acaacagaga atatatgaaa gtctattggt gtatacagca ttaatagtag tgaaagttta 360

acagaaaaga tctgaaaatc tcccaaagtt atatagaaac agatctagct gacacactgt 420

gtacctagaa atgattttgg atctcttcac agagacccct atcccaccaa cctccaatcc 480

tcccaccata cattgatccc tttctatctg cttggatcat tagctgtaaa tttaacttcg 540

aaaaacaaag tacgtttaat cattgtac 568

<210> 76
<211> 491
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (371)..(371)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (394)..(394)
<223> n is a, c, g, or t

<400> 76
ttagattgaa gaaaacataa cgtttaattc tcagaaacaa atgcaagcct cggtccaagt 60

cttccttccc aaacctttgt catttaggga ttgagaagct gagttgggtg aaaggttgaa 120

tagaaaacaa aaaggaaagc tagaaacacg ctgagctcat ggagatgcag cttcttctgt 180

agctcctaaa ggcccagctg aggtatcatc taatgagaat tctctctatg ccaggcactg 240

cgctaagatt ttcacatcat taaccaatgt gagttttagg caaccccgaa gcaggcagtc 300

tgttcatccc aattgcagct gaggaaacag gggtgaggtg aggccaagca gctgggccca 360

agggtcccct ncctgggtaa gtgggcacag ctgncagccc tgccagggtg gggtcctgct 420

aaccaagccg gcgttttctt gtcaccatgc cgtattcgcc ttcccgtact atcaaaatgt 480

acttatccaa t 491

<210> 77
<211> 2437
<212> DNA
<213> Human

<400> 77
tcggatccac tagtaacggc cgccagtgtg ctggaattcg cggccggtcg acccaccacc 60

atgaggtcct gcctgtggag atgcaggcac ctgagccaag gcgtccagtg gtccttgctt 120

ctggctgtcc tggtcttctt tctcttcgcc ttgccctctt ttattaagga gcctcaaaca 180

aagccttcca ggcatcaacg cacagagaac attaaagaaa ggtctctaca gtccctggca 240

aagcctaagt cccaggcacc cacaagggca aggaggacaa ccatctatgc agagccagtg 300

ccagagaaca atgccctcaa cacacaaacc cagcccaagg cccacaccac cggagacaga 360

ggaaaggagg ccaaccaggc accgccggag gagcaggaca aggtgcccca cacagcacag 420

agggcagcat ggaagagccc agaaaaagag aaaaccatgg tgaacacact gtcacccaga 480

gggcaagatg cagggatggc ctctggcagg acagaggcac aatcatggaa gagccaggac 540

acaaagacga cccaaggaaa tgggggccag accaggaagc tgacggcctc caggacggtg 600

tcagagaagc accagggcaa agcggcaacc acagccaaga cgctcattcc caaaagtcag 660

cacagaatgc tggctcccac aggagcagtg tcaacaagga cgagacagaa aggagtgacc 720

acagcagtca tcccacctaa ggagaagaaa cctcaggcca ccccaccccc tgcccctttc 780

cagagcccca cgacgcagag aaaccaaaga ctgaaggccg ccaacttcaa atctgagcct 840

cggtgggatt ttgaggaaaa atacagcttc gaaataggag gccttcagac gacttgccct 900
gactctgtga agatcaaagc ctccaagtcg ctgtggctcc agaaactctt tctgcccaac 960
ctcactctct tcctggactc cagacacttc aaccagagtg agtgggaccg cctggaacac 1020
tttgcaccac cctttggctt catggagctc aactactcct tggtgcagaa ggtcgtgaca 1080
cgcttccctc cagtgcccca gcagcagctg ctcctggcca gcctccccgc tgggagcctc 1140
cggtgcatca cctgtgccgt ggtgggcaac gggggcatcc tgaacaactc ccacatgggc 1200
caggagatag acagtcacga ctacgtgttc cgattgagcg gagctctcat taaaggctac 1260
gaacaggatg tggggactcg gacatccttc tacggcttta ccgccttctc cctgacccag 1320
tcactcctta tattgggcaa tcggggtttc aagaacgtgc ctcttgggaa ggacgtccgc 1380
tacttgcact tcctggaagg cacccgggac tatgagtggc tggaagcact gcttatgaat 1440
cagacggtga tgtcaaaaaa ccttttctgg ttcaggcaca gaccccagga agcttttcgg 1500
gaagccctgc acatggacag gtacctgttg ctgcacccag actttctccg atacatgaag 1560
aacaggtttc tgaggtctaa gaccctggat ggtgcccact ggaggatata ccgccccacc 1620
actggggccc tcctgctgct cactgccctt cagctctgtg accaggtgag tgcttatggc 1680
ttcatcactg agggccatga gcgcttttct gatcactact atgatacatc atggaagcgg 1740
ctgatctttt acataaacca tgacttcaag ctggagagag aagtctggaa gcggctacac 1800
gatgaaggga taatccggct gtaccagcgt cctggtcccg gaactgccaa agccaagaac 1860
tgaccggggc cagggctgcc atggtctcct tgcctgctcc aaggcacagg atacagtggg 1920
aatcttgaga ctctttggcc atttcccatg gctcagacta agctccaagc ccttcaggag 1980
ttccaaggga acacttgaac catggacaag actctctcaa gatggcaaat ggctaattga 2040
ggttctgaag ttcttcagta cattgctgta ggtcctgagg ccagggattt ttaattaaat 2100
ggggtgatgg gtggccaata ccacaattcc tgctgaaaaa cactcttcca gtccaaaagc 2160
ttcttgatac agaaaaaaga gcctggattt acagaaacat atagatctgg tttgaattcc 2220
aggatcgagt ttacagttgt gaaatcttga aggtattact taacttcact acagattgtc 2280
tagaagacct ttctaggagt tatctgattc tagaagggtc tatacttgtc cttgtcttta 2340
agctatttga caactctacg tgttgtagaa mactgataat aatacaaatg attgttgtcc 2400
atggaaaggc aaataaattt tctacagtga aaaaaaa 2437

<210> 78
<211> 582
<212> DNA

<213> Human

<400> 78
ttccagatca aattattatt tatttcaata agactattgc gaggcattaa aaaaactaaa 60

tagtaatatt acaaaatcta tatacttgca catttagtat ttgtcaatgt gccagaggtt 120

ttcttcatga aatttgactt ctttgaagtg aaggcttttt tctatcatct cttatagctc 180

tgactgaata agtcttaatg ctttcttcat gttttctatc aataggggta aatcccgagg 240

cttatatgtg tacaatctgt tagagtatct tccagctatg tcagctctaa ctgttaaaga 300

agggtctaca aacatgattc taggcacata ttgcccatca ggtgataaat tcttatcagt 360

ggtttcatgc ataaggttta gcatgatgaa cttattctga gccatttctt gtatttcttc 420

attttgggca aatactttct ttagtgcttg agagtattga caatcctcca ggtgatgaat 480

aaccattaat ggcttcttac tttttgagc ataaaagaga ccttgctcat aagtttgtac 540

ccaagagatg gcatctaccc atcctcttga gagtgactga gg 582

<210> 79
<211> 511
<212> DNA
<213> Human

<400> 79
ttgaaagcct ttacatttat tgaagagcgg acatatgttt gcaaatcaca gtgtgcatgg 60

gcatgcatta catggttcat aatgctattc caattaggct tttcatagtg ccttctcata 120

acgtccttta aaaaaaataa taactgaaag ggaaaagaaa gtgtcaattg caattacatt 180

tacaaaacca aactgctgct ttcaattaga gtgaatctgt gcttcgctac tcagatatac 240

acatgtagat tttccaaggc ccatgcacac acttctgtag gggcagaaat tttctatgaa 300

taatggcttt agcaacccga atagtatctc taaacattga caagcttggg gaacagggca 360

acaagtgcaa tgaacaatac aatttctaac gtttgtccca gtcaacatac cactttgccc 420

tggagatatt taacacagca tttcattttt ggaatgataa gggataattc atctaattaa 480

gggtattata cagaatatac ctataaaaga c 511

<210> 80
<211> 987
<212> DNA
<213> Human

<400> 80
gtgatgatcg acatttgaat ctctttgccc tttccaacgg ctatggcatc aggttctaaa 60

ataagctcgt aatttttcct gttattttaa taatatggaa atattagcat agtgtttctt 120

ttgatagtga tagactataa tccatattta aattttatag agaagaaatt ttattgtact 180

gtgatgtaga tatttattat ccaggtaagg atttgcccgg tgtgtatttt ttacaattga 240

gacattttac tttaatcttt aacaaaaaat gcattaaaaa cacactcaaa aaaaaacaaa 300

aaaaaaaaaa aaagacaacc caaacggggg gggaaaaaag aggtgattgg cacccttat 360

cacgaaaatc ttcctgcggg cggccctcta ataaccagtc ttctggaaca actgtgccca 420

aaccgaggtg tcgctcttta aaataggcgt ggtctcccac catatctaac actcaaatgg 480

cgccgcctct tctcaaaaga acccacaaat atgtgtgccg accaagagtt aaaaaacccg 540

ccttgcgttg gacggggcgg acattatctt ggattggcac caacactatt aaaagaggcg 600

atgcgacacc caaccccgat taattggcag cagacagaaa tcctttctca actagtatag 660

aaaactgttg tggccctcca ccacacaaaa ggacgaatcc tacccaacta atgtattagc 720

tcctctccag tgtgaacaat atactaatct ggatgcgccc acacccaagc tggttagcta 780

acacaaacac cagggaggga agacacacgc attttgtaac acaaatagat ctaatattag 840

actcgtgccg tataacatcg gacactaatc tctagcacca gcgggcgtcg actgtaatta 900

tgtcccgcca ctgctgctgt tcgtcggcat gttatcatgc cccacgctct ctgtgatcct 960

acacgagagg gatcacccca cgcttat 987

<210> 81
<211> 483
<212> DNA
<213> Human

<400> 81
ctgttcaaaa aaggttttat ccaaaaaagt taatcaagac aagcaacaga tactgcaaag 60

cattatatac agcaccatag tccaggggcc aaagaaatca ggaggggctg ggcagtagag 120

gaattccata tattaatgaa tgtgagatta agtatagagt gaagacatta acacacaatt 180

ctaatttctg ttaggcagaa tgctccccta ccctgatgcc acagcctttc acgtttccta 240

aaccctagta acctctgatc tccatctgcc tcatcaacac gtcaccaccc tttgctcttc 300

ttccaattag tcacatgttg gctgaattta tttcactcca gtactttagg accttgacag 360

acaaatcgat tacaaggtca attcccagga tttcttcagg gtgtgttcag gagtgcagat 420

gttctttgga tgacctttct actaaattag acctctgaag gagaaagcta cttgccagag 480

gct 483

<210> 82
<211> 552
<212> DNA

<213> Human

<400> 82
ttttttacc acctagaaat aaacattata ttttcctctg atatgtaggt aagaacttca 60

aatataagac ataatttaaa agtttataat tgacatagtc agggattata aataatatca 120

cacaaaataa gctcttaatg caagaaatga atctccagga tagatcatac taatctatcc 180

aatccagccc tctgttctga aagcagcaca tgaaaaggca gagaaagaaa aataatctct 240

acgacctggc ctgttaaaca tgtatttatt tcctgagtaa ctattaggtg ctagctgtaa 300

tgggctattc agtggaggac agtggtcaaa gcctcttatg atgtatggca gatgccagaa 360

agatatgaaa gatgtgatgg tacaaaaaag gaagttggag tcacatccag ccacaggact 420

aactaagcct ctttggggca ggagactttg gaagtgttga aggagagtag aatctattca 480

gaaagaaaca actgggggca ggtccttcca gtctgaatga agattaacta ggcgtaatgt 540

aactggcatc at 552

<210> 83
<211> 505
<212> DNA
<213> Human

<400> 83
gactgtagaa ggaaagcatt ttattgcaaa taactaatag ttacaaaagc actttttaaa 60

tgttattatt agatgttaag ccgaaaatct agaaactaac atttacccag gttacaaaat 120

aagagcttca tatttttcaa agtctctaag ggtaaggtac atccccagat aaaatgagta 180

taggccagtc tcctttggct ttgtggattc tttccaaaaa ttttccagac tatttagctt 240

tccttgtgta gttacagctc aaattagaaa ctgaagaaac agcaagtggc caggcagggt 300

agaaagcaaa taaactgagc tacctgtgcc tttttccaaa tcagtatatg tgcttggctc 360

ctgaaaaaaa aaattctgat atgtaggcat tctcattact tagtgagata ttagtgaaga 420

cctttcaacg tataacacac agtaactgtt gcatagtttt aataaacact tgaattttcc 480

aggaatgtga ctgctgtgta aatca 505

<210> 84
<211> 671
<212> DNA
<213> Human

<400> 84
gcggccgcgg ctgcggcggc agcagcactg gctgggtctg gctgcacagc aatggggctg 60

atcatgtgct ccactgtgtg gattttgcca tcttcaatca ttttaggggc tggagctgct 120

ggaaacatgg aatactgagc cccaatggca gggatggcta ctgtaccagg tttaatggca 180

actgggttga cggtagggat ttccaaattc ggcaccagtt catatccttt ttcttgctgc 240

tttcctttcc cttcatgata tcggctatat ataccacggc cagcagaata tccccсgagg 300

taggaacccc taggccctgg ggctctgttg ccagctgcac ctcgccctcg gcctcttatg 360

ctgcctgctt tcacaaagta gtccctgttg ggcccaatga gcgcgttgta ggggtagccg 420

tagtaggcca gtgtgtaggg gtcgcaggag tacacgtagc tgggctgctg cgctgcctca 480

gccgcgccgc cgcccctggc tgccttctgg tagcgcgagt actgctcctt gtccacgggc 540

ttggccagcg tgacctccag gcacgagccc tccagctcag tgccggttga gttgttcatg 600

gcatgcacgg catcctcgcg gctggtgaag tgcacggagg cgtaggtccg gatcttcttg 660

acgcgctcca c 671

<210> 85
<211> 563
<212> DNA
<213> Human

<400> 85
ttttttttt atatctgtta taagcttttt ctttttaga atttaagctt atgagtttat 60

ctacgcccac tatattcata attacagttt tatatctgca tacaaaagct atgtaaaaat 120

ccatttttcc caaatataca aatttttttt ggatagttta aaacattttg atcacagatt 180

tcaacagagt tttaggctga aaaaaatatc accatctagc aatatcactt aacactgttt 240

gcaaaacaca aatcttccaa tgactgtaaa tctttttcta ttctgtagta tttttctgat 300

tctcagggca tgaaaacatt atgggaaaaa aaaggatttt ctacgaagaa agcatggaga 360

actaatttgg ctctatggtc aaattaaaaa tgccaagtta ataagggaga accaaaagaa 420

agaagtggca taatgtcaca tcagctcatt catgccctga taatttctgt atcaacaata 480

catatgtaaa gtgtctcctt ttgtcttaca ttgtgctcca taatttacat gagtattatc 540

tgcatcctga ggaggacaga ttt 563

<210> 86
<211> 545
<212> DNA
<213> Human

<400> 86
ttattaggga ttcctgccac cttattaaca tataaaacaa tctggatgtt gacatagaaa 60

tgcaaatttc actatacaaa ggtaaggctc caagcacagt aacatggccc ccatatcttt 120

agtatttcaa tgaaataaac ttattgggga ttcaccccga gttgtgttta taaatattag 180

acaaaccaca aaatatattc caaatacata acattttaca atatttttca agcacagaca 240

aatacatact ttactttacc tacattgttt tcatgatcca acttgcatta gcactaaagg 300

caatattgtg tgtgtatatg tatttgccat atgtgtgtgt gtattatata tatttattta 360

tatccacaaa tgtacactca gtggcattta tggaaaattt aacccttca ggctgtgggt 420

tttacccacc atagtatctg agagggagaa gaaccaataa tacatctcaa attcctcaat 480

tagggcaaaa taagcacaat tatgcatgag gggcatatat gttgtgtcta ttcaaagaca 540

cacat 545

<210> 87
<211> 464
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (28)..(28)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (276)..(276)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (422)..(422)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (463)..(463)
<223> n is a, c, g, or t

<400> 87
gcagcgtttg tccctgggca tgtgatgngg agtcctgggc acatcgagat gctttacttc 60

tttctttcga cctcttaaaa aactaaacca agccaaacca caaaggaaat ctgcacaact 120

taagagaaac ttgaaaggga tcgtgtaact actagtttgt actaagtttt tttcaagaaa 180

gggaaacaaa tttatatata tatatatata tatatatatg tgcaatatat ttttacactg 240

tgtgattaac attagggagt actgagtgca tcactntatc agtgtgacgg gtgatgtcca 300

cgtcatggct gttctgactc tgaaagccac ttctgctgat gtctaaaccg cactcaccgc 360

ggacgtccgg ggttgtggtg gccctgctgt gcctcctgca ggtgagaggt gtggtgttgc 420

cngttggact tgctgttgag cctggttgca aacctgtagt gana 464

<210> 88
<211> 611
<212> DNA
<213> Human

<400> 88
tttgctaaaa atttaccaaa atagtttgaa cacataaaaa tatttttaaa aaaacagaac 60

caaaaaccca gcataaattt agttgtatag gcattggtta gaggacactg ttttcactaa 120

ggattatatt caacaacttt ctcttgagtt gttactaaaa ttctgattct gaaccttata 180

gcttataatg gtgccaacta ttagaaatgg gaaaatctaa ttcagtccaa tgtaacatgt 240

attatgatat aatagatgaa gggtatgtct acactataat aaaaaataaa catatttttg 300

gttatttaaa gaccatcttc ctaacctgta actaaaataa ctgtatttga tttaaactta 360

tttaagtgca gtgaattatg gaaagctaac ttaaaggttt gaataatcaa ttatgagtaa 420

ggaacacctg ttgacagccc cgtgaccctt cagaaccagg catttgctga aaaaaagaaa 480

tcactagcat tgaatatagc ccttagtcac gtgagagatt aacttcatga gcaacccagc 540

atgtagagga tgaggtggac tttcccagcc acccactcct tgaggggaca gtagtattca 600

tagtgaaact g 611

<210> 89
<211> 515
<212> DNA
<213> Human

<400> 89
tttaacagta aaatttattt ttatttttgc atattctcaa atacacattt acaatagtat 60

cacacttcct atatgaattc ttcatagtta ttttaagtat tttacaattt gtacagagga 120

agggacatac aatatctaat aggctatttt tcaaccaaat aataatttat gtccttgtaa 180

gattttgtac ctctttaaaa ctttcaactt caacatccac ttttttagct ttgctaatca 240

aattaagaat taaaaccagc ctgcaaataa taacagtata taacattaag cacaatttca 300

tttctttctt tatacaaatg ttctatattt acttgaccaa atgcttaatt accttttaaa 360

ggtttcaata ccgtggttaa aaacaaaaca actgtgtata cctccagact atatgaaaaa 420

tatgaaatat gtaaagtgtc acgtttttta ccttagttta tttttaaaag ataaatagct 480

aactatctgt attaatttta aagaatgttt taaaa 515

<210> 90
<211> 535
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (422)..(422)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (424)..(424)
<223> n is a, c, g, or t

<400> 90
gaattctcct taatagttat gtgcaaacag gatgctcgac cctaagtgaa ttttagtgca 60

gcctcaggcc aatcttggtc ctgggagtgg gcagggttcc cagaagaacg agtctggttt 120

ctgaggctgt agaagggagc cggaagcccc tcaacttgat cacggtgaga acacagggag 180

cctttggaga agctattcag ccactgtagt taagagctcc tgttctgatc cagggagacc 240

tgggttcaag tcctgactca gccacttcct agttgtgtga gtttcagaaa aaaaatcact 300

tcacctctta gaacgcaatt tcagcttctg taacaatctc taggttagga gggagtgggg 360

cgggtgaggg cggggagggg agaggaaaaa aaaacacaac aatctctatg tggtttaagg 420

gnangggggt taaatgagat gatcatgaca atgcctatag aagtgctggg agtatgaaag 480

ctggaacagc cctgtgagct ttgtgtcgtt gtccgatttt tgataagggc aaata 535

<210> 91
<211> 535
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (97)..(97)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (322)..(322)
<223> n is a, c, g, or t

<400> 91
tttttttttt tttttttaca atttaaacaa gaggattcac tggtttgaaa aaaaggtttg 60

aaaatcagga aagctaaaca aaagtcattt tacatantgg agaaactgag acccatatgt 120

gtaaatggct tcccaaggtc acagtggtgt cagtggcaga gctggtactg taccaggctg 180

cctggatcat agactgatgt ttttgccaag accagccgaa atgttcctct caggaggtgg 240

caggtggggg tggagtgcca ggaaggcact gtccaaagaa gtgggttaag gtcacagcct 300

cccggctccc aaggaccccc tngagaacag ttgctttgga aaggtcactc agatgtgaac 360

cagaggcttg aggttttgga gtggaaaggg gcagggtaag gaagaataga gtaggaggag 420

ggcgggggac agggattcat cctccaggtt cctcacaccc ccactgggag cagcgccccc 480

accccaagca cctgatttca aagtctcccc tccactgaag ggaggggcaa aggga 535

<210> 92
<211> 548
<212> DNA
<213> Human

<400> 92
accttcttaa ctatgagatt attacaaata tatttttaca aatacaaaaa actgaagtac 60

agagaggcta agttaatttc tccaaggtcc cacagcaagt aactgcagaa gggcaaagca 120

aaaataggac aacacatgta ggcaatacca agcagttctt gtggcagcaa ctggaaacct 180

tttggagaca ccattctgca tttcgttgta gtcatacaca aaaccctagt tatgtatcca 240

tgcttctttc tcataatgcc aaagtggcac tattctaatt tactaacaag gttttctaaa 300

aactacccaa attattgagg tgtttttgct cacttcttcc cattagaata aatgtagaca 360

ataagaaacg catgagggat gacatagtcc tccatcaaat ctgtcctttc acacaagaga 420

tggcatggtg tagtgtagca gaatcatgag ctgccaggaa attatgaatt ctgattcctc 480

cagctgagtc tttgaaaaag tccagatgag aaacacttcc atcctgatgc tgaagcaagg 540

agaatgtc 548

<210> 93
<211> 481
<212> DNA
<213> Human

<400> 93
tttacattgt tattaccact ttatttattt cctgatatcg actagataat tacatgtccc 60

atcactctcc cacatgggcc atacaatggc ttgagctgca tcattttgta aattcctcaa 120

gcttctctac tggtacacat attaccctag cctatgtttc tgagatgcct tagtgaaagt 180

tgattttctt tctatgtctt ctcagggaaa acgacttctg ctttcacact tactggagat 240

gggagatgag tggcactggc aattcacacc ctgaaccttc agcttcacaa caaaatcgtt 300

tgtgaggcca aaggaatcaa gacagcagag ctcaaagcag ggccagaagg tgcagggggg 360

accacattgg cgggtctcgc tcagggacac gatggcgtca ttgtaacagc actgctccaa 420

ggggttgtag atcttgtctc cacacctggg tgccggctgg cacagccatg gttctgagcc 480

a 481

<210> 94
<211> 4021
<212> DNA
<213> Human

<400> 94
taacgaacgt gtgagagatc tacttcggcg gaagtcatct aaaaccttca atttgagagt 60

ccgtgagcat cccaaagaag gcccttatgt tgaggattta tccaaacatt tagtacagaa 120

ttatggtgac gtagaagaac ttatggatgc gggcaatatc aaccggacca ccgcagcgac 180

tgggatgaac gacgtcagta gcaggtctca tgccatcttc accatcaagt tcactcaggc 240

taaatttgat tctgaaatgc catgtgaaac cgtcagtaag atccacttgg ttgatcttgc 300

cggaagtgag cgtgcagatg ccaccggagc caccggggtt aggctaaagg aagggggaaa 360

tattaacaag tcccttgtga ctctggggaa cgtcatttct gccttagctg atttatctca 420

ggatgctgca aatactcttg caaagaagaa gcaagttttc gtgccttaca gggattctgt 480

gttgacttgg ttgttaaaag atagccttgg aggaaactct aaaactatca tgattgccac 540

catttcacct gctgatgtca attatggaga aaccctaagt actcttcgct atgcaaatag 600

agccaaaaac atcatcaaca agcctaccat taatgaggat gccaacgtca aacttatccg 660

tgagctgcga gctgaaatag ccagactgaa aacgctgctt gctcaaggga atcagattgc 720

cctcttagac tcccccacag ctttaagtat ggaggaaaaa cttcagcaga atgaagcaag 780

agttcaagaa ttgaccaagg aatggacaaa taagtggaat gaaacccaaa atattttgaa 840

agaacaaact ctagccctca ggaaagaagg gattggagtt gttttggatt ctgaactgcc 900

tcatttgatt ggcatcgatg atgacctttt gagtactgga atcatcttat atcatttaaa 960

ggaaggtcag acatacgttg gtagagacga tgcttccacg gagcaagata ttgttcttca 1020

tggccttgac ttggagagtg agcattgcat ctttgaaaat atcgggggga cagtgactct 1080

gataccccctg agtgggtccc agtgctctgt gaatggtgtt cagatcgtgg aggccacaca 1140

tctaaatcaa ggtgctgtga ttctcttggg aagaaccaat atgtttcgct ttaaccatcc 1200

aaaggaagcc gccaagctca gggagaagag gaagagtggc cttctgtcct ccttcagctt 1260

gtccatgacc gacctctcga agtcccgtga gaacctgtct gcagtcatgt tgtataaccc 1320

cggacttgaa tttgagaggc aacagcgtga agaacttgaa aaattagaaa gtaaaaggaa 1380

actcatagaa gaaatggagg aaaagcagaa atcagacaag gctgaactgg agcggatgca 1440

gcaggaggtg gagacccagc gcaaggagac agaaatcgtg cagctccaga ttcgcaagca 1500

ggaggagagc ctcaaacgcc gcagcttcca catcgagaac aagctaaagg atttacttgc 1560

ggagaaggaa aaatttgaag aggagaggct gagggaacag caggaaatcg agctgcagaa 1620
gaagagacaa gaagaagaga cctttctccg cgtccaagaa gaactccaac gactcaaaga 1680
actcaacaac aacgagaagg ctgagaagtt tcagatattt caagaactgg accagctcca 1740
aaaggaaaaa gatgaacagt atgccaagct tgaactggaa aaaaagagac tagaggagca 1800
ggagaaggag caggtcatgc tcgtggccca tctggaagag cagctccgag agaagcagga 1860
gatgatccag ctcctgcggc gtggggaggt acagtgggtg gaagaggaga agagggacct 1920
ggaaggcatt cgggaatccc tcctgcgggt gaaggaggct cgtgccggag gggatgaaga 1980
tggcgaggag ttagaaaagg ctcaactgcg tttcttcgaa ttcaagagaa ggcagcttgt 2040
caagctagtg aacttggaga aggacctggt tcagcagaaa gacatcctga aaaaagaagt 2100
ccaagaagaa caggagatcc tagagtgttt aaaatgtgaa catgacaaag aatctagatt 2160
gttggaaaaa catgatgaga gtgtcacaga tgtcacggaa gtgcctcaag atttcgagaa 2220
aataaagcca gtggagtaca ggctgcaata taaagaacgc cagctacagt acctcctgca 2280
gaatcacttg ccaactctgt tggaagaaaa gcagagagca tttgaaattc ttgacagagg 2340
ccctctcagc ttagacaaca ctctttatca agtagaaaag gaaatggaag aaaaagaaga 2400
acagcttgca cagtaccagg ccaatgcaaa ccagctgcaa aagctccaag ccacctttga 2460
attcactgcc aacattgcac gtcaggagga aaaagtgagg aaaaaggaaa aggagatttt 2520
ggagtccaga gagaagcagc agagagaggc gctggagcgg gccctggcca ggctggagag 2580
gagacattct gcgctgcaga ggcactccac cctgggcacg gagattgaag agcagaggca 2640
gaaacttgcc agtctgaaca gtggcagcag agagcagtca gggctccagg ctagcctgga 2700
ggctgagcag gaagccctgg agaaggacca ggagaggtta gaatatgaaa tccagcagct 2760
gaaacagaag atttatgagg tcgatggtgt tcaaaaagat catcatggga ccctggaagg 2820
gaaggtggct tcttccagct tgccagtcag tgctgaaaaa tcacacctgg ttcccctcat 2880
ggatgccagg atcaatgctt acattgaaga agaagtccaa agacgccttc aggatttgca 2940
tcgtgtgatt agtgaaggct gcagtacatc tgcagacacg atgaaggata atgagaaact 3000
tcacaatggc accattcaac gtaaactaaa atatgagctg tgtcgtgacc tcctgtgtgt 3060
cctgatgcca gagcctgatg ccgctgcctg cgctaatcat cccttgctcc agcaagatct 3120
ggttcagctt tctcttgatt ggaaaacaga aatccctgat ttagttttgc caaatggagt 3180
tcaggtgtca tccaaattcc agactacctt ggttgacatg atttactttc ttcatggaaa 3240
tatggaagtc aatgtccctt ccctggcaga agttcagtta ctgctctaca caacagtgaa 3300

agtcatgggt gactctggcc atgaccagtg ccagtcgcta gtccttctga acacccacat 3360

tgcactggtg aaggaagact gtgtttttta tccacgcatt cgatctcgaa acatacctcc 3420

tccgggtgca caatttgatg tgatcaaatg ccatgcttta agtgaattca ggtgtgttgt 3480

tgttccagaa aagaaaaatg tgtcaacagt agaactagtc ttcttacaga aactcaaacc 3540

ttcagtgggt tccagaaata gtccacctga gcaccttcag gaagccccaa atgtccagtt 3600

gttcaccacc ccattgtatc ttcaaggcag tcagaatgtc gcacctgagg tctggaaact 3660

tactttcaat tctcaagatg aggctctttg gctaatctca catttgacaa gactctaagg 3720

aggagacttt taaagatgca ctacatgttt tttgagatca ttaataaaat aagcattgtg 3780

aaaacagtca aggcaatatg aatatctccg tgtagctaat tgaattggaa ctggaaaaat 3840

gcagacctct aaaattgaaa atgtaactat tttaaatatc tacaataaaa taaaaacagc 3900

taatagcaga gccccaatga aatatcttta tcatcacctt gcttcatttt cttgaaactc 3960

aggcttgtaa atttgtgcct gcttcattat ttgtgaggtg attaaagcat ttctgattgt 4020

t 4021

<210> 95
<211> 2917
<212> DNA
<213> Human

<400> 95
tgtcagtacc acacctgtta cgaggtttcc tgagagtagc accccttcca taccatctgt 60

ttacaccagc atgtctatga ccactgcctc tgaaggcagt tcatctccta caactcttga 120

aggcaccacc accatgccta tgtcaactac gagtgaaaga agcactttat tgacaactgt 180

cctcatcagc cctatatctg tgatgagtcc ttctgaggcc agcacacttt caacacctcc 240

tggtgatacc agcacacctt tgctcacctc taccaaagcc ggttcattct ccatacctgc 300

tgaagtcact accatacgta tttcaattac cagtgaaaga agcactccat taacaactct 360

ccttgtcagc accacacttc caactagctt tcctggggcc agcatagctt cgacacctcc 420

tcttgacaca agcacaactt ttacccettc tactgacact gcctcaactc ccacaattcc 480

tgtagccacc accatatctg tatcagtgat cacagaagga agcacacctg ggacaaccat 540

ttttattccc agcactcctg tcaccagttc tactggtgat gtctttcctg caacaactgg 600

tgctgtatct acccctgtga taacttccac tgaactaaac acaccatcaa cctccagtag 660

tagtaccacc acatcttttt caactactaa ggaatttaca acacccgcaa tgactactgc 720

agctcccctc acatatgtga ccatgtctac tgcccccagc acacccagaa caaccagcag 780

aggctgcact acttctgcat caacgctttc tgcaaccagt acacctcaca cctctacttc 840
tgtcaccacc cgtcctgtga ccccttcatc agaatccagc aggccgtcaa caattacttc 900
tcacaccatc ccacctacat ttcctcctgc tcactccagt acacctccaa caacctctgc 960
ctcctccacg actgtgaacc ctgaggctgt caccaccatg accaccagga caaaacccag 1020
cacacggacc acttccttcc ccacggtgac caccaccgct gtccccacga atactacaat 1080
taagagcaac cccacctcaa ctcctactgt gccaagaacc acaacatgct ttggagatgg 1140
gtgccagaat acggcctctc gctgcaagaa tggaggcacc tgggatgggc tcaagtgcca 1200
gtgtcccaac ctctattatg gggagttgtg tgaggaggtg gtcagcagca ttgacatagg 1260
gccaccggag actatctctg cccaaatgga actgactgtg acagtgacca gtgtgaagtt 1320
caccgaagag ctaaaaaacc actcttccca ggaattccag gagttcaaac agacattcac 1380
ggaacagatg aatattgtgt attccgggat ccctgagtat gtcggggtga acatcacaaa 1440
gctacgtctt ggcagtgtgg tggtggagca tgacgtcctc ctaagaacca agtacacacc 1500
agaatacaag acagtattgg acaatgccac cgaagtagtg aaagggaaaa tcacaaaagt 1560
gaccacacag caaataatga ttaatgatat ttgctcagac atgatgtgtt tcaacaccac 1620
tggcacccaa gtgcaaaaca ttacggtgac ccagtacgac cctgaagagg actgccggaa 1680
gatggccaag gaatatggag actacttcgt agtggagtac cgggaccaga agccatactg 1740
catcagcccc tgtgagcctg gcttcagtgt ctccaagaac tgtagcctcg gcaagtgcca 1800
gatgtctcta agtggacctc agtgcctctg cgtgaccacg gaaactcact ggtacagtgg 1860
ggagacctgt aaccagggca cccagaagag tctggtgtac ggcctcgtgg gggcaggggt 1920
cgtgctgatg ctgatcatcc tggtagctct cctgatgctc gttttccgct ccaagagaga 1980
ggtgaaacgg caaaagtaca gattgtctca gttatacaag tggcaagaag aggacagtgg 2040
accagctcct gggaccttcc aaaacattgg ctttgacatc tgccaagatg atgattccat 2100
ccacctggag tccatctata gtaatttcca gccctccttg agacacatag accctgaaac 2160
aaagatccga attcagaggc ctcaggtaat gacgacatca ttttaaggca tggagctgag 2220
aagtctggga gtgaggagat cccagtccgg ctaagcttgg tggagcattt tcccattgag 2280
agccttccat gggaactcaa tgttcccatt gtaagtacag gaaacaagcc ccgtacttac 2340
caaggagaaa gaggagagac agcagtgctg ggagattctc aaatagaaac ccgtggacgc 2400
tccaatgggc ttgtcatgat atcaggctag gctttcctgc tcatttttca aagacgctcc 2460
agatttgagg gtactctgac tgtaacatct atcaccccat tgatcgccag gattgatttg 2520
gttgatctgg ctgagcaggc gggtgtcccc gtcctccctc actgccccat atgtgtccct 2580

cctaaagctg catgctcagt tgaagaggac gagaggacga ccttctctga tagaggagga 2640

ccacgcttca gtcaaaggca tacaagtatc tatctggact tccctgctgg cacttccaaa 2700

caagctcaga gatgttcctc ccctcatctg cccgggttca gtaccatgga cagcgccctc 2760

gacccgctgt ttacaaccat gaccccttgg acactggact gcatgcactt tacatatcac 2820

aaaatgctct cataagaatt attgcatacc atcttcatga aaaacacctg tatttaaata 2880

tagggcattt accttttggt aaagaaaaaa aaaaaaa 2917

<210> 96
<211> 138251
<212> DNA
<213> Human

<400> 96
gatcaaaaga tgctcatcaa aagctctgag ctttcctgag tgctaacagg aaacatccag 60

catcactggt ctctccaagg ctgcaggtgt ctttgcccat agtgcctgtt ttgtgtcagg 120

gaaagaatca acctgggagc caagcccagg aatcaggatg accaagacat actggacaag 180

gaaggaacaa acccatccaa ggacactcaa ggacaaatca agcaaatgaa tttaagggag 240

acctgctcat ggtctgcttt gctgctcagc atggctggga ggcacagtgg aagatcatgc 300

atccttcccc tgggactcct ctgccagagc ctgagagctt tctcctgcac acaggctagg 360

ggtagggcag ttggaattga tccatgcctt ctagctagac tgtgggtccc ctcagtcttg 420

ggcatggtga cagcccagca tcagacagag gtcagtatca aactagaaaa tttaataaat 480

gctgtcagat ttgtagaccc aagaaaatat aaactgccaa tcacggagga aaaaaatctc 540

tcaatgatct tatctttata tgattccctt gctgcctgga gattgacatt tccttgggga 600

taatctggtc ataggattgg tgaaggtgga agggaggcaa cctccgaagg tggggccctc 660

tgctcacctg ggacaggggg ggcctgaggt aggtgtctgt gtgggctggg caggaggatg 720

ggagcagtgc ttctagatgt ttccactttc tcctcattag ataataatga atgggtgatt 780

tccctagtca ctgcagtgtg aggaaatcta caaaattaat ttcacaatac actttacagg 840

ataggtggag aaacacatga agcacaactg cagtgggtta taaaaaatgg cctttcgagt 900

tgagcagtaa attcgttcaa gcagccattc tgaaggacaa actggctctg tatttaacag 960

gggcattcca gcacttctct agctactggg ttgacaatga ctcaccaaag cctctggtag 1020

ccaccacagg acgcccagag cacgttttaa agctgaacac caaactgcgg acttcgggag 1080

taagtgaact gactggtttt tattttgttt tactgctttt aacattacag tgactgttac 1140

aggttccagc aggataactg ggtggaaatg agtttggttt cacttagtct ctctaaagag 1200

aaagcaagtt ggtagactaa tacctaataa aagcaaagct gccaacaatt gaaattgcct 1260
gggctgctct gtgtgtccca catgcatggg tgtgggtgcc agtgtgtgtg cgtgtgtgca 1320
tgcatgtgca tgtgtgttgg gatagagtgg caagaaaatg ggaaataata agaatgttca 1380
gtccatagcc cttcattata aaaaggtgag ctgtaataaa tactagtgcc acatttagcc 1440
aaaactttac tccagccaaa ggtgatattt tcatgataac atcctgtgat tgctttgttc 1500
ttcgtctttt atgttcttcc tagatgggct cagaacatac aagaattaag tacacatctt 1560
attttccagt gataatgcta ccggcaaatt ctgttgtttg tataaacatc agccatgttt 1620
atataactaa actagtgttt tgttttgtca attcagcaag aaattagacc acatggtggc 1680
ttaatgctgc attgatttgg ctatcaattt gttttcactt ttctgcaaaa tatttaatac 1740
attattaaat tgaattatgc tgatgccaca gttgttctta tctcaattgt cttaaaattc 1800
atttaatttt tttttccttt cgtttcatta ttcaaatttt aacttcagtt ctcaacattt 1860
tatctgatgg aagagatgga gtccattact aaggactcca ttgtgctcca tcatgccaga 1920
gttgtaaaat agatctttta aaggaaattt actgtgattt ttttctattt aagagcttcc 1980
tctccagttg agcatgtaag aaaattatac caggagaata cagtaaactc tatgaggcaa 2040
gctataaaca tgtaggattg tgattagggc tggttctcct tctagagaca tggtaggatt 2100
gcaatttcat accatccttg aagttagaga gagccacttg actcatttag ccaatgaact 2160
gtgagcagaa tgacatgtca cttccagcag aagctttaag aatctgagag acattcatac 2220
gttttccatg tgctgtagcc ttatacccaa agcctgggtc ccaagtgacc atgacaggca 2280
gagctccctg ttgagccaca gagatttaga gaatggctgt taacacagca taatccagcc 2340
catcctgact aatctgatat taacatgtat aataaagaat tctatcaatg ctgagggaag 2400
atgattagtt aaggtcctag gttgcaagtc tcaaaacctc ttctaaggat tgtagacagg 2460
aaattaaatg acttctagtc cctagagttc ccaatctcct accatcccat cctaatatga 2520
cagaagtaat tcctgagttg cttctgaaac cagagcttcc ctcagaaccc ttagcctgcc 2580
agatggcttc ttggagagcc ctcactcact tttctccttc tgctattgct gctcattcat 2640
tccagctttt aaaaattcat ctttatccag gaacctcgct tctagaaaag tcatacaggt 2700
gcttccagga ggctacatgg gcacccatat ttttctagcc actttcatta gaccaatgca 2760
gcagagaaga aaagcctcaa taattattat gacatggcat gttaggatac caagtaaatt 2820
gcatttgtaa aatgtgattt tctgttggtg ttcacttcgg ctctactgac atttggtaag 2880
tattattgac tgactgacta actaatgtgg tcattagtct tcataaagaa aggctctcta 2940

caaaaacgga gggatgccct ttttctggca tttaatacgt aagaaattgc ctccgataga 3000
aaccagagtt gcctgattac tatcagcaca ggagaaatgt attaatgtgc ctttctagta 3060
acaggttttt agaaagtcaa atataaacaa atctgtctat ttgtgtgtgt gcatgtggta 3120
gtggggaggg aagaaaaaag gagggggaga gaaagagaaa taagaaccaa gtttattata 3180
ctgtattcag ggggaaaaca ttttcccaag gttctaacag aagagcaaag tgccactgtc 3240
aatagcctca gtagtgttag ggttgctttt atgtatttat ttatttactt atttatttat 3300
ttttcctttt tttttccttt ctcttttttt cttctttttt ttttttttgg acagagtctc 3360
acactgtcgc ctgggctgga gtgcattggc gcaatcttga ctcactgcaa cttctgcctc 3420
ccaggttcaa gtgattctcc tgcctcagcc gcccaagtag ctgggattac aggtgtctgc 3480
caccgtgcct agataatttt tttatatttt tagtagagat gaggtttcac tatgttggcc 3540
acgctggtct caaactcctg acctcatgat ccacccacgt tggcctccca aagtgctggg 3600
attacaggcg tgagccaccg cccctggcca ggattgcttt tatagccagt cttcaggtgc 3660
ccactgtagg aacaatgtca tttagccctc gggattattc tgtgccaaat atggataatg 3720
actaatattc aacacagata ttctcagctc agaagagcaa ttagcaaatt cataaattaa 3780
gtgcttgctt ccttttttagt caaatacaaa catttgttaa aagatattat tttgctttac 3840
actttttctc tcagaaataa acagatgctt gaattcccac agtgctgctt gagcctcaca 3900
ccatgtcatc ctgccaggca cccagatcca gttctagagt ttcacatgat catgagtgtt 3960
ggttaataag tcactgtgaa ctgggagggg agatttttca ggagtgccac agggctctcc 4020
ctttaatcac atacactccc tgctttcatt ggaaagtgta taatgatgtc agagtgcccc 4080
agaatggagc tagttggaag actgccgtca tagggatgcc ttagtgaatt aatcaggttt 4140
taatttctgg ctctcaactt tgtagatgta aaagttgatt tatcaatatg tgagaaagga 4200
tgaatctttc tgaaggttat gtcatcacac tcactaagca cacagagaat aatgtctaga 4260
atctgagtgc catgttatca aattatactg agactcttgc agtcacacgg gctgacatgt 4320
aagcatcgcc tgcctagtac agactctccc tgcagatgaa attatatggg atgctaaatt 4380
ataatcagaa caatgtttgg tgagccaaaa ctacaacaag ggaagctaat tggatgaatt 4440
tataaaaata tacctcagcc aaaatagctt aattcagtct cccttatcat aaggatactc 4500
ttgcctaaag ggacagtaat attaaagaca ctaggaataa cctctgtact ttggacagta 4560
gacctgcata gcccattagg cctcaatgaa gtcttatgca agaccagaag ccaatttgcc 4620
attttaaggt gattctccat gtttctgctc taactgtgct tcacaatact caagacactg 4680
aatcaggatg tttcctggag tgcagggagc tgtccgtgtt actgagcagt tctcagcaac 4740

acaaagatcc tactgactcc tcatcagact tctttctcac tggaatttta cacctgggct 4800
gttaacacca ggccaggtca aattcaaagg agagaaaaaa gctcattatg aagggtaaaa 4860
tccaaaacac tgtgcataaa gatatgtgtg cacaattttt atacataaag atttcataaa 4920
gccaaagcat caggaaatga aaagagatac agaaagaaaa atgatggtaa atgagacatt 4980
aatttaccct tctaatctct atcacagcaa aaaggtaatt aaaaaatcta tatgaggacc 5040
aaaaaataca caaagactat gtagcaaagc ctatagcctg aaaaagtaaa cattgaaatt 5100
tgtatgtcca taaaatgttt acaaaattca gtacatatta cacaccccac cctaaaaaca 5160
tctaagcaaa gtagagaatg tagaaatgct acagattata ttctctgatt atgacacaac 5220
aaaactagaa attacagcat ggaaatttaa aagctttctc ttaaataatt ctatgtcaaa 5280
aagaaatcca ggccgggtac agtggctcat gcctgtaatt ccagtacttt gggaggccaa 5340
ggtgggcagg tcacttgagg tcaggagttc aagaccagcc tcgtcaacat ggcgacaccc 5400
tgtctctact aaaaatacaa aaattagctg ggcctggtgg cgcatgcctg taatcccagc 5460
tacttaggag gctgaggcag gagaattcct tgaacccaga aggtggaggt tgcagtgagc 5520
tgagattgca ccactgcact ccagcctagg tgacacagca agactctgtc aaaaaaaaaa 5580
aaaaaagaaa tccaaataaa atttccagaa tatgtggaaa atagtgccaa taaaaatatt 5640
acacatgtgt aatcccagca ttttgagatg ccaaggtggc aggatcactt gagaccagga 5700
gttcgcaacc agcctggaca acatagggag actccatctc cacacacgcc aaaaaaaaat 5760
tttaaatagc caggtatagt ggtacttctt gtaatcccat ctacttggga ggctaaggtg 5820
ggagaatcac ccaacctcag gagttcaggg cttcagcaag ccatgatcat atcactgcac 5880
tccagcctca gcaacagagc aagatcctat ctcaaaaaaa aaaaaaaaat cacatgtggg 5940
aaatagctat agcacaataa aaataaatgt attaagtatg aacaacaaaa aagctagtaa 6000
aggttgaaca acaactatcc ttaggaaagt ggaaataatg tgttaataaa tatgaaagca 6060
ggctaggcac ggtgactcac atctgtaatc ccagcacttt gggaggctga ggcaggcaga 6120
tcacctgagg tcaggagttc cagaccagcc tggccaacat ggtgaaatct tgtctctcct 6180
acaaatacaa aaactagcca ggcttggttg cgcactcctg taattccagc tacttgggag 6240
gctgaggcag gagaatctct tgaacctgag aggcagaggt tgcagtgagc caagatcatg 6300
ccactgcact ccaactgggg caacagagtg acactccatc tcaaaataaa taaataagaa 6360
agcagaaact aataaattag aaaacagaaa catagaacta atttataaat caaagcacta 6420
tgccttgaaa agagggagaa aaattgtgaa ttaaggaagg gaagagatgg ttggagagga 6480

ggtgggagaa ggcagagata attgaaggag caaaagcatc tggagaagca aagccactga 6540
aagatgaaca gggctctgaa agaaatgctt gattgctatc ttttcaaatg actgcagttc 6600
ccagtgacat catttttctc ctccctggaa gtctgagggg cagttcactt atctactccc 6660
ctcccctact cctcacccca cactcaaaac ctgtctatgc tcctttcatt ctcatatgac 6720
agatttcaga tggcattctt atttccctga tttcttttg agatagcttg catttcccta 6780
ctctatataa agccaccgtt tatcaaatgc ctacatggac caagcagtcc acaagggctt 6840
cacagacagt tttactaaac tcatgccaaa actttcaggt tttatagata aagatctata 6900
ccttatagat aaaggtatct ataaggtata gataaaggta aggtatctat accttataga 6960
taaagaaatt gaagcttata gagtttaagt aatgttccca aagcctcgtg gctagtaatt 7020
caaacctaat ttctgcctac tccaaagtct atttttcctc atgatactat actgcctctc 7080
catggataaa gacagagatc acatattaat aaaatttgca caaagtcggc aaattgttga 7140
aagggaaggc taagatgact aataaaatca agagccagat gatctcaaca acctgaaata 7200
actggctgac aaccaatttg aataactccc tgcgggtgaa gttcaaagta ctatttgggg 7260
ttttttttta agtttggctg ggtgcagcgg ctcacgcctg taatccaagc acttagggaa 7320
gccaaggtgg gtggatcatg aagtcaggag ttgaagacca gcccggtcaa catggtgaaa 7380
ccccatctct actaaaaata aaaaattagc cgggcctgct ggtggatgcc tgtagtccca 7440
gctacgcggg aggctaaggc aggagaatcg cttgaaccca ggaggtggag gttgcaggga 7500
gccgagatcg caccactgca ctccagcctg ggtgacaggg cgagattccg tctcaaaaaa 7560
taaaataaaa taaaataaaa aataaaagtt tgatatattc agaatcaggg aggtctgttg 7620
ggtgcagttc atttgaaaaa ttcctcagca ttttagtgat ctgtatggtc cctctatccg 7680
tcagggtcct agcaggaaat tgttgcactc tcaaaggatt aagcagaaag agtttaatga 7740
agggtctctt tccagggtta agggaactgc tagggtttgg atatttgacc actccaaact 7800
catgttgaaa tgtgatcccc attgttggag gtgggaccta atgggaggtg ttttggtcct 7860
gagtgtggac ctctcacgaa tgtcttggtg ccatccaagt gagatcttgc tcgctctttt 7920
tttcttttg agatgtagtt tcactcttgc tgcccaggtt ggaatgtagt ggtgcgatct 7980
tggctcactg caacatccac ctcacgggtt caacccattc tcctgtgtca gcctccagag 8040
tagctaggat tacaggtacc caccactatg cccagctaat tttggtatt tttagtagag 8100
acggggtttc accatgttgg ccaggctggt ctcaaactcc tgacctcagg tgatccacct 8160
gcctcggcct cccaaagtgc tgggattaca ggcgtaagcc accgtgccta cctagttcta 8220
gctctcttaa ttcccacaag agctggttgt taacaagagc ctggtacaaa cccctctctc 8280

ttgccacgtg atctctgcac atgccagctt cccttcccct tctgccatga gtggaaacag 8340
actaaagccc tcaccagaag caaatggtgg caccatcctt cttgcacacc ttcagaactg 8400
tgaaccaaat aaacctctct tctttaaaat tattcagcct ctggtattcc tttataacaa 8460
cacacacaca cacacacaca cacacacaca cacgcaaaag cagactaaaa caggaactaa 8520
ttagaaatgg tgatgcaccg agggattggc accgaggctc cccaacagga actgaggcca 8580
tggatagaag gacacattca tgttattttt ttctaatggt taagtaatta tttgctctta 8640
ctctcaaaat ttctgccaag gcctccccatg gaccaaactc aactagaatc taggaagcag 8700
agaacctgag tgttgcattc agcagaagtc agcttcctag ggaatattgc aggaagggtg 8760
aaggtagaga atctggtggg gaagcaagca aatgcccatc acatgcactt tcctccaaca 8820
gagcgactca gatgctataa aacttgctaa cgcagtctca gggtctgatc acagtaacat 8880
acaatccagg ttttaatcat cagaaatcgc agtcctattg tcttctgcac agacccaaac 8940
acacttggag gtcatgttca atatgaatac ctcacagaga aggaaattta cacacgagaa 9000
gtacatctgc agaaagccag ctggcatgtc aaccattcga aaactcagga tgttcgggat 9060
aaagaagact caggaagaca agtatgaagc ataatctgtg acattattga tatcttcctg 9120
atatcaataa tattgatatc ttcctgatat caatattatt gatatcttcc tgaagaacat 9180
aattcctgcc taccatcaac aagcatcaat actttctacc agctattctc aaccctcatc 9240
atcggaagag acagacactg actgtgtcaa agtattagtc ccatcattca gcaattaact 9300
ttagctcaat gcttcaaaaa ttcttcaggc cctgtgtaat ttcagctatg tacattaatg 9360
atgagtaccc atacaaccat tctgtttctt attttcagta ccatatttaa taaatatcag 9420
ttattcaata ctttatttag acattttgtt agattgtttt gaccaatgaa gtctaatcta 9480
aatgttctga gcatgttcaa agtaagctag gctaacctat aatttttggt gtgctaaatg 9540
catttttaac ttatgatatt ttcagtttac gggggtttgt tgggacataa cttcatcata 9600
catcaaggag catctgtata tgggatatag ttaaagcagt gatcagagga aaatctatag 9660
ccttaacaca tttattaata aaagtgtagg aattaaatta tcagctgaaa aatgtaaaaa 9720
gtatctaaaa gagtaagcag aaagtacaag aaagaaccca tagtagaaaa aagtgaaaat 9780
taataaaata agaagccaaa aaacagatca aatcagtaaa ccaaaaatct tgttctttaa 9840
acaaatcaac aaagttgaca aaaaattaga tcttttaatc atgaataaaa aaagagaaag 9900
cacaaaaatg aataaggaat ggtgagagaa ataactattg ataatcagca aataaaaaat 9960
cattaaaaac aatgttgttc acatctatga aaaacattga aagctagagg gaatgggtaa 10020

ttttccagaa aaatacaatt caccacaatt gacttcaaaa aaaaaaaaaa agaagtacag 10080
cacttatgtg agcaatttcc atagagaaat acagttgtca tggaattata acacacacac 10140
aaacactagg tttagatgtt ttcacagaga attccaccaa acctttagaa atcagatcat 10200
ccaaaggcaa attaacaacc ctcagccatt tgaggcaaaa tattacaatt gaggcaagat 10260
atactgtact gaaaacttga ggaaaaagca ggagagaaag ttcctttggg aaattcgaat 10320
actcaaaagt gcttacatac aatgaaaaat ttggaaatcc ataagcatgg ccaaggtggg 10380
acacatgctc agaaaaggcc tgagaagaca ctaataactc acctttagta attcctaggc 10440
tcacagcaag aaaaaatgaa ggctaaggca gaattatata tggctccact aagtgttgag 10500
ggagccccaa tacagagtca gtaagcaaag tctgggagat gtttttcata ttttttttctt 10560
ttttggctcc ttgcagtcaa ggaaatcatt tttaaatcac taaatgctaa atgaacacaa 10620
gctaaaggaa ccgagccgcc ttcaaacatc aaacataaaa aagaatgcag atattacaaa 10680
accagtttac aaaagttact aaacaaataa aaactacatc ccacagtggg taacaaaaat 10740
aaccttgaag aagggaaaaa tttggtttcc agaataaaca cattataata tccaaaatgc 10800
ccagttttca acaaaaatta agaagcatgc aaataaacac aaaactatgg cccatttaca 10860
gaagaaataa atgagactct ccctgagtaa gcagatattg gaaatattcg acaaaaactt 10920
tatataactg tcttaaataa acttaaagag ctaaagaaac ccaagagaat gacatataaa 10980
taaataagaa atatgaattt tttaaaaggt acaaaaaaat tctgaggctg aaaagtacaa 11040
taactaatta aaaagttact ttttacttag ggttccaata gaagatttga gcagctggaa 11100
aaaagaatca gtgaacttga tagatcaagt gaaatgattc agtctgaaga gcaggaaaat 11160
gaaagaatga caacaaaaaa gaatagagcc taaagacctg tgtaacaaca tcaagaatgc 11220
ctacatacag aatcctggtg gggagtgagg ggcaggaaga ctatttgaag aaatgtgttt 11280
gaaagcttcc caaatttcac taaaaacaaa tatatacatt caaaaagctc agtgcacttc 11340
atcaaggaaa tatacaaaga tattcacacc aagacacact atgtttcaaa ttgtcaaaag 11400
gcaaagcgaa tgtttgaaag cagcaagaga aaggcaacgc gtcatttaca aaggatcctc 11460
aataagtttg acagcagata gtgcattata atccatggat gccagaagag cttaggaaaa 11520
aggcaatgca tcatttacaa aggatcctca gtaagtttga cagcagagag ctcattataa 11580
accatgggtg ccagaagagc ttagaatgac attttaaagt tctgaaagaa aaaaacactg 11640
tcaaccaaaa attctgtaac ttggaagatg ccccttcaag tattaaggat aaattacaca 11700
ttcccagatt aaaaaaaaaa gagagagaga aagagaaaga aagaaagaag agagagaaag 11760
aaagggagag aaagaaaaag aaagaaagaa agaaagaaaa agaaagaaag aaagaaagaa 11820

agaaagaaag aaagaaagaa aaagaaagaa aagaaagaaa gaaaagcaag caagctttaa 11880

aagttcatgt ttggtaggct gtacttcaag atacactttt aaaaaaaaag actccttcag 11940

atacaaacta aaaaacacta gaaagtaact caaaaccaca taaagaaata actccagtaa 12000

ggataactac ataggtaaat ataaaagcaa ttatcatatt ttttgtaagt ctttttaaat 12060

attctatatg ttttaaaaca aatgtgtaaa ataatgacta taaatctatg ttaatgaagc 12120

atgatgtata aagatgtggt ttgtgaaatt accaacataa agaaattcat aggaaactaa 12180

ataataatag agattttgta tactattgaa gttgtttcaa tttattctaa attgttccaa 12240

attaagaatg ttaattgtaa atccccatgg taaccactaa gttaatatct tttgaaaata 12300

cagaaaagga aagcagaggg taaacacagt gatatgctac aaaatagcaa ctaaacacaa 12360

aagaaggcga taattgagga aattaggaac aaaggaggta taagacatac agaaaacaaa 12420

agcaaaatgg taggagtaag cccctcttta tcagtaatta cattaaatac aaatgaatta 12480

aactctccaa tccaaagaaa cagattgaca gaatggattt ttaaaaaatg atccaactat 12540

attgtccacc agatactcac tttagatcaa aatacacaat gagttgaaat gaaaggatgg 12600

gagaaaatat tccatgtaag taataaccaa aggagatctg aggcaaatat acttatatca 12660

gacaaaatag actttaagtc aaaaactgtt acaaaataca aagaacagta tatattgatt 12720

tcaaaattaa acaagaagat ataacaatta taaatatatg tacaccaact aacagggctc 12780

caaaatatat aatgtaacca ttgagagaat taaagggaga gacagacaat tccacgaaaa 12840

ttgttgggca ttttaaaacc caactttaat aaaggacaaa acatccagag caaatatcaa 12900

gggaggaatt agaggatttg aataaaacta taagcaataa ctatagataa cacttctctc 12960

aaaaactgca gaatacacat tcttctcaag tgaacatgga acattctcca gcacagatga 13020

tatgttaggc cataagataa gctcaataaa cttaaaaaga ttgaaatcat gcaaagtatc 13080

ttcactgacc acaatggaat gaaataagat atcaataaca aaaggaaaac tagaaaattt 13140

acaaatattt ggaaattaaa caacacagta tttaccaacc aatgaatcaa agaacaaatc 13200

atgagggaaa ttagaaaatg tttagagacg attgaaaaca aagatataac aagatgggtg 13260

tgatatatca aaagcagtgc tcagagttgt aacacctaca ttttaaaaaa gaaacatgtc 13320

aaatcaataa ccaaacttta ctcaataaat cataaaagga agagcaaaca aaatccagag 13380

ctagcagaag gaaggaaata aagattagag cagagataaa tgaaattgag aattaaaaaa 13440

ttatacagag atcaacaaaa ctaaaagttg gttcttttaa aatatcaata aaattaatat 13500

acttttacat agactaagca aaacatctct attcagctga cttttttttt tacaagggag 13560

ccaacattat tcagtgggga ataatagctt tttcaacaaa aagtgctggg aatactgaat 13620

attcatatgc aaaaaaaatg aagctggacc cctacctcac attatataca aaatctagat 13680

tggatcaata atgtaaatat acgagtgaaa accatacatg cttagaagaa aacatggaaa 13740

taaaacattg ctgtggattg gcaatgcatt cttagataat acaccaaaaa tacaagcatg 13800

aaacaaacaa atgtagccaa aatgtaccag aatctgaaaa catgtattat ctataaagaa 13860

ttagagggga atttggtgaa agaaatatgg gagaatggga tattgctctg tgaatgcttt 13920

tgtgcataat tgtacatttt taattaagtt aatcttttac actctcaaag tgtgatatta 13980

agcaagcaaa gataagttat tacaagactc taaaaccgaa tgcaatgaga aacaagtgaa 14040

tccaaatata tttcaaatga atgaatgaca taatcaaact taaggggaaa ataataatta 14100

atctgattaa tttttgactg ttctcttatt tcaaattgac ttttgaacat actttgacta 14160

catactattg cttgaaaaaa taaaatatct gcaaaaaatt attaaatctt catgatagga 14220

ttttttcttt ttatattagt ataaatataa caattctgaa acaaatgtat gtgcattgta 14280

agattaagcc aatgagtaaa tattaatata tttgtattgc tagaacccca gattctcact 14340

gtgaaaggac agagatacag atatggaata agacaaggaa agaagcagcc cactgagtta 14400

cattagaatc agtattatca acataaataa gcaatgtgct ctctcacatg ctctttcctt 14460

ctcttaaaaa atatataata tgtacttatt atatattata tgcatagaca cacgtgtgtc 14520

tatacatatc ctacatgtac atattgagga ttaacaggtg ctagtagaaa atattaactt 14580

tctttgtatt aacaggtgtt agtagaaagt agtagtaggt gctaagataa aagccataat 14640

taaacctcct ggtgaatgaa cacaccatca cctacaatct taccaaaaat agaatcaagc 14700

acgtgtccta gtcaaacctc tggattcaac tgtcatttgg ataaaacgca aaggatagtg 14760

aaaatgtcga tcttcactga gagtctcacc agcaaaattc acagtgtgga caccaagtga 14820

caaaaatccc aaatttttca acaaatatat tgtatgggaa agaaaacttt gaaaagaaac 14880

ctgtatgtta gaaggcattt taaaaacacg acaaatgaaa acaaatgggc aagactaaat 14940

catagtgtct tggaatgcat gcatgaagga cacagccgtg aaaatgcaag gacgcctcta 15000

ctggaacagt catgtttatc gtcacttttc aggagaaagg tggctgcagt tgaggagagt 15060

cacatgcttc agggctggca aagtcctata tcttgactta tgtgatgatt acagggatgt 15120

ttacaaaaat caaactataa gtttgttttg tgccatgttt tgtattgtgt gtgtgtgtgt 15180

tttgtttttc aacttaaaaa taaataaaat caaaaccaag gcttcattat caagtagcac 15240

aaagtctcca atctataacc tcctttgtct ggatatctgc atttaactac cattgccaga 15300

gctaatcctg acaatgcatt catattttta acactgaaac acagtaaaca gggaaaattt 15360

tgctcctcta aaacagggca tcttcaggca atcagaacaa ctcagaaagt ttctgtctgt 15420
tgcataaaac tcccctgtgc aaagagttac acaaaatgct gtcatagtaa aggtagttaa 15480
ctaacggcac taattgttct tgggcagtgg ccaagtggaa cttcagagac ctggcattgc 15540
caaccagaaa tcaattgtca tgggaattgt ctcctggaat cactttggtt gtcccagggt 15600
aacgcaggga aagtggttaa tgggtcactt cggggtggca tcttcatcag taaatcacat 15660
ttactttctc ctactaagaa ttttattttt ggccatgaag ccaaaagtca gctcttaaat 15720
aacaagggaa gcaaataatc attgaataaa aatagcagaa agaaaaagct gtgcaaagaa 15780
atttatgttt ttaatttgtt atatatgtat atttttatca tactttaagt tctagggtac 15840
atgtgcacaa tgtgcaggaa taaaatttat gtttttaaaa tttattctac attatgaatt 15900
ctacattaga aaaataaacc atagcctcat cacaggcact taaatacact gaagctgcca 15960
aaacaatcta tcgttttgcc tacgtactta tcaacttcct catagcaaac tgggagaaaa 16020
aagcaatgga atgaataaaa tgatagccac aaaaatcaag gtgggagaaa tacttattat 16080
atgtccataa aaaattttaa ttaatgcaaa gtattaacat caatgattgc agtaatacag 16140
atcttacaaa tgatagtttt agtctgaaca ggactatcca aaagttaatt ttctatagta 16200
acagttttta aataaaatat caattcctga aacacataaa atggtccatg agtatacaac 16260
gagtgaaaaa aaacaaattc agagcaaaga taaattaaga agtatctaat attcaaacat 16320
agtcaaagag agggagattt ctggataatc acttaaaccc atggttaaac ataaatgcac 16380
atatgttaat gtttactgaa taacttatct gtgccaagtg gtgtattaat gattcatttt 16440
tatttttcac taaatctttt ctctaaagtt ggtgtagcct gcaactaaat gcaagaaatc 16500
tgacctagga cctgcacttc ttaccatttt gctcatattt attccctgtg catttttgta 16560
acatgtatat gttatatata tagaaagaga gagaggcaga gatggaaagt aatttatgga 16620
gtttgatgtt atgtcagggt aattacatga ttatataatt aacaggtttc tttttaaatc 16680
agctatatca atagaaaaat aaatgtagga atcaagagac tcattctgtc catctgtgat 16740
agttccatca tgatactgca ttgtcaagtc attgctccaa aaatatggtt tagctcaaca 16800
ctgagtgact ataggaaacc agaaaccagg ctgggcgcta aagatgcaaa gatgaatgag 16860
acatcatctc tgccgtccaa aagcttactg tctagtggga gagttacaca cgtaaggaca 16920
gtaatctaat aagagctaat aagtgaaaac taagataaat taataataca agattacagg 16980
gaaggtttcc aaagtcaatg aggcctcaaa tgaatcttga aagtgtgcaa ggattaacca 17040
aatgaagaaa tgtgtaagtt tttcaaacaa aaaggaacag catgagcaaa tgcaaggagg 17100

cctaaaataa agagatgtgt aaagaggtgt aagcagcttt gtactgctgc ctgataatta 17160
gaagaatatc gggagtaaca agagctatag aagagagtca caattatgga aaaatattta 17220
ttaaattata agaaatttat agcataagga atagtaggac cgttaaatgt tttaataaag 17280
atgatgcttc ttttaatatt tatttttatt atactttaag ttctagggta catgtgcaca 17340
acgtgcaggt tacatatgta tacatgtgcc gtgttggtgt gctgcaccca ttaactcatc 17400
atttacatta ggtatatctc ctaatgctat ccctcccctc tccccccacc ccacaacagg 17460
ccgcggtgtg tgatattccc cttcctgtgt ccaagtgttc tcattgttca agtcccacct 17520
atgagtgaaa acatgcggtg tttggttttt tgttcttgag atagatgatg ctttaaattg 17580
accactctag ctgcattgtg ggaggaaaaa agattttaga acaagactag aaacagaata 17640
attagaaaaa tgcaactaca atgcagatga gtgattatca aggtctgaac tgaatagtgg 17700
aaatagagat aaggaggcaa attcaagata tgtgcgtgac agtaaaatta acatgacctg 17760
gtgtttgatt gactcggtaa agtgaaagga aaggatgaat aatcaacaaa taatatttat 17820
tctaccaaat gcctccatgc cgctttgatg acaggataat atgtaagctt ttctatattt 17880
cagaaactat atgacatgac gaaaagtaaa aaggggatgg gggtaaggag gtatcctgaa 17940
ttgactgaga aataaggagg tattccacag agaatataaa taaacatata cttagtgttc 18000
aaggaataat aaaaaagaga acatctatgt gtccaccata caggatatga aatagaacat 18060
ttgccggcca tggtggctca cacctgtaat cccagtactt tgggaggccg aggtgggagg 18120
atcacttaag cccaggacac aggttgcact gagccaagat cacactatcg tactccagcc 18180
tgggccacca tgtctcagaa aaataaaaaa actagatgtc ttggaggatt ggaaacaaaa 18240
tagaacttta ctagtgcctt agacgcccat tgggtgctcc ttgccaattg tgttctcctt 18300
tatttcctgc tggatatgac cactgtcctt ccattgcatt gtatgtgttt tttaatagac 18360
tttaatggtt ctcaagtgat gcattattta gtttggttct ttgaaactta tataaatgaa 18420
attattttgt agaagttctt tcacctttat cagaaggtac tttcaccttg attcaataat 18480
aagtttgcat attacaacct tgttgaatgt tggtgtaatt catccattcg tattgctata 18540
tgatattcca ctacatgaat atgtcggact tcattcctca gatctattgt tgatgaacac 18600
ttgaaatttt tccagttttt aaccattaca aacaatgctg ctatgaacat tcttttgtaa 18660
atcacctggt tcatatgtgc aagatatcct ctgggctata tatttaaaag taaaattatt 18720
gagttattca acattaccat gaaatgctac actatttttt ttaacaatcc taccaattta 18780
cacttctacc acgaacagat aagcattacc attggtcttc atttgtagga accatatttg 18840
tcttttgctc tgggggcttt gttttgtttt gctttgtttt ttgcttagaa gtgctttggc 18900

tattagggat cttttttttgg ctccatgtga actttaggat ttttttttaa ttttgtgaga 18960

aataacgttg gtaatttgat gggaattgca ttaactctat agattgtatg ggtgatatgg 19020

tcactttagc tattgatttt tctaatccat gagcatggga tgtttttcca tttgtttatg 19080

tcatctataa tttctttcat tagtattttg tagttctcct tgtagagatc tttcatttat 19140

atagttatgc attcctaggt atttttcatg gctattgtaa attcagttga gttcttaatt 19200

tggttctcaa caaattaatc tcaacaaaca ttcaaacagc ttgaatgtat ttggtgtata 19260

gaaatacaac tgatttttgt ggcttgttta tcccaagact ttactgaagt cgtgtatcaa 19320

gtctaggagt cttctgaaga ctttagggtt ttctaggcct acagtcatgt catcagtgag 19380

cagagatcat ttgacttctt ttctaatttg tataccttttt atttctttct cctttctgat 19440

agttctggct agcacttcca gtactgtatt gaataggaat gatgaaggtg aacatccttg 19500

ctttttttcca gtttctagaa gcaacacttc taacttttgc ccatccagga tgatgttggc 19560

tgtggctttg tcatagatga ctcatttttt gaggtatact ccatctatac ctatattgtt 19620

gagggttttt atcataaaca gatgttggat tttatcaaat gcttattctg catctaatga 19680

gatgatcata gggtttttgt tctcagttcc atttatgtgg tgaatcatgt ttattgattt 19740

gtctattttg aaccattgaa gcacccctgg aataaagccc acttgatcat gatgaattat 19800

ctttttgatg tgttgttagc ttcagtttgc tagaattttg ttgagtattt ttacatctgt 19860

gttgatcagg gataaggatt tgtagttttc ttttgtgttc tttttaaaat tttccttgtt 19920

aattttactg cacagtatta ttttaatgat gaataaagtg ttgagctgga catgtgtacc 19980

ttgttcctca tgttagaatg aaactgttta atatgtcatg attatttata atgttgagag 20040

tagtttttgt gtatatatta agatatttac atcagttctc ttctattcct agtttgttat 20100

tattacaaat agtttcaaat gtgaacaagt gcttttccca cagctattga aataaccata 20160

tttttttctt ttattcagtt aatgtggtta atttcattgt ttggttttct aattttaaac 20220

catacattct tgaaattact gcacttagtc atgatgtatt tttctttgga gtatattgtt 20280

ggattatatt tgcaaacatt tttgtttaga attattatgt agtatattag tctgtaattt 20340

catttctttt aatatccttg tatggtttta ctatcatgga ggtaccacca tataaaacaa 20400

gttggaaagt gttatgtctt cccaattctc taaaaatatt catgtaacat tggcattatt 20460

tctttattaa atatttggta atatttcttt attaaatatt gcatccacct agccctggag 20520

ttctttctac aggaaaaaaa aattttctaa ataaaatttc cacaatgaaa aaaaaactac 20580

tcagtttttc tagttttttt ctgatcattt cataaaagta ggtattttc ataggaactt 20640

gaccattcct tatgattgtc aaatttatta atataaagtt tcatatttta tatttatttt 20700
atcagataaa taaaattata tgttttgaaa tatatattca ttgtaaaata gccatgttaa 20760
gctaacatat gcattacctt acatgcttat cttttttat gagaacactt aaaaatctac 20820
tcttagcaat tttgaagaat acaagtacat cccctatgga gaacagtttg aaggctcctc 20880
aaaaaagtaa aaatagagct accatgtggt ccagcaatcc cactgctgca tatatacccc 20940
ccaaaaaaga aatcagtata tcgaagagat atctgcactc ccgtatttgt tgcagcacta 21000
tttacaatag cgaagttatg gagtcaacct aagtgtccat caacagatga atgaataaag 21060
aaaatgtggt acttatatac aatgaagtat tattcagcca taaaaaggaa tgagaccctg 21120
tcatttgcaa caacatagat gaaactggag gtcattatgt taagtgaaat aagccaggca 21180
caaaaagaca aatactatgt gttatcactt atatgtggaa tccaaaaagc aaacaactga 21240
actcatggag atagagagta gaaggaagta taccagaggc tgtgaagggt agtgggggtt 21300
gggagaggtg ggggatggtt aatgggtaca aaaaaagaaa gatttaataa gacctagtat 21360
ttgatagcac aacaggggga ttgcagtcta aaattcaatt atacatttaa aaataactga 21420
aagagtataa ctggattgtt tataacacaa ataataaatg cttgagggga tgaatatcca 21480
attttccatt atgtacttat tgtacattgc atgcctgtac caaaatattt catgtacccc 21540
ataaatgtat acacctgcta tgtacccaca aaaattaaat ttaaaaacaa tacattgtta 21600
tccactatag tcaccatatt gcacaataga tctgttgaat tcattcctcc tgtacaatgc 21660
aattttgtac cctttgacca acatctaccc aatcctcctg gtaaccatca ttctactctg 21720
tacttctatg tgttcagcct tcttagacct ccacatacaa gtgagattat gcagtatctg 21780
gctttctgtg cctggattat tttactcagt ataatgtcct cccggttcat tcatgttgtc 21840
acaaatgata cttttttat tttttaaggt tgtatactat tctattgtgt atgtgtacca 21900
cattttcttc atccactcat gtgtcgatgg atacttaagt taattccaca tcttggctgt 21960
tgtgaataat gctacaacaa atatgggagt acagataact cattgacaca ctgatttgat 22020
atctttttaa tatatgccca gaaatagcgt tactgaatca tacggtaatt ctatttttac 22080
agaatcattt atactgtctt ttacaatggc tgaaatagtt tacattctca acaattacaa 22140
ggttttcctt ttctccacat cctctccaac acttggtatc ttctgccttt tctgtaacag 22200
ccattctaac ggatgtgaaa tggcatttta ttgtagtttt aatatgcatt tctctgatga 22260
tcagtgataa ttagcatttt tatatatctg ttggccattt gtatgtcttc ttttgagaaa 22320
tgtctattta gatcctttgt caatttttca ttagggttcc ttgttttctt attattgtgt 22380
tgtttgagtt cctaagatat tttggacatt agcctcttat caaatgtata gtttgcagat 22440

aatttctccc attttgtagg ttatcacttc actctgttga ctttcttttg ctgtgcagaa 22500
gctttttagg ttgatgctat tccatttgtg ttttgttgct tttcttgcct gtgctttaga 22560
gtcatatcat aaaatattat tgcccaaacc aatgtcttgg agttattccc ctgttttctt 22620
ccaggagttc tatagtgcta ggtcttacat ttaagtctaa cttattttga atttatattt 22680
ttatatggta tgaaataagg gcctaagatc aatcttgtgg acattcagtt ttctcaacac 22740
catttttga agagactgtt ctttccccat gtgtgttcct ggcacctttg ttgaaagtca 22800
attgactata atatgtagat ttatttatgg gctctttatt ctgtgtaatt ggtctatgtg 22860
tctgcgttta tgccagtacc atggtgtttc gattgctata gctatgtagt ataatttgaa 22920
gtcaggtaat gtgatatctc ctgccttgct tttttcgatc aagattattt tggcttttca 22980
gagtttttg tgattccata cagatttgag agttgttttt ctatttctgt gggaaaatgt 23040
cataggaatt ttgatagaga ttgcattcaa tatgtacatc actttggata gtatggacat 23100
ttcaaacata ttactttttc caatccatga acatgatata tctttccatt tatttgtggc 23160
ttcttcaatt gttttcatca atgttttgta gttttcagtg taaagatcat tcacctcttt 23220
gtttaaattt acatctaagt attttttgtt gctattataa ataggattgt tttcttgatt 23280
tcttttttg tatagtttgt tgttgatgtg tagaaatgct actgaatttt gtatgttcac 23340
attgtatcct gcaactttac taaattcatt tatgaattct aaatttttg gcagagttat 23400
tggtgttttc tatatataag atcatgtcaa ctgcaaacag aaacaattta acttcttcct 23460
ttccaatttt catgcctttt atttctttct tttgcctaat tgctctggct aggacatcca 23520
gtactatgtt gaatagaagt tctgagagtg ggcacccttg tatgaagttt tccacaacat 23580
ctcttatctt tttattagct atatattaat acggatgttt cttcttcatc aggagtttga 23640
aaaatatgtc ttttctctat attgttctta atcagtcttc ctagaagtat ttcaatttca 23700
aaaagtagca acaactgtgg gagttcagtc aggctggtgg gaaaaatttt aaagatagtt 23760
ataagaaatc gacacaaacc ttcatggaag gctgggggtg ttgtatagct tcagtaatag 23820
atctgaatga aggcggccta atccttcctt gagtaaatag cttaaagtag gtgcaaagga 23880
atgtaaggga gtttatctaa ataacttgtt tactcatgtg gtcctgaagc caacctttga 23940
tcattcacag gcaggatggc tctctctcgg gggagggtga ccaggttaat taccctctat 24000
ttgtgttgac taaaagcccc tgtcatttaa tgtttttca ataaatgctg gcagggctag 24060
ctagtcaggg ctcgtggctg ccagaactct ttctgtgcac ggcccagccc cctagcggct 24120
ctttcactga ataattggtg tctgagtaca ttattcatcc ctcgtgcagc tggggtctgc 24180

aggacagacc cccacaaaca acaatttgca aaagcaaact tccctgtttt gttttttttcc 24240
aaagatgata aattagaggc ttttagtatg cctcggccac tgagaaatag caagagagtg 24300
cacaaaggtc aactctgtga gctctaagtc aagaaggaaa atgggaatcc accagaatca 24360
tgaaggacat catagatccc aagaaggaga atgtgagcaa acagtcaaca tgacagcaac 24420
cagcttataa aagtgagcga agtcctagta tgtgagagag gcagagagcc tccctctgta 24480
actgacattt tcactgtgaa tctgagcaac cccagccaag ttgttgcatt ttctttctcc 24540
caaggcctgg agtcaacatg gggagaggct tggagatgct gtgaagcaaa gacactggga 24600
acagctgcag acattttccc agaccaggaa gtaagagcaa gatgccattt tcaatctgga 24660
tgcatgcaaa gtcagctttt tttttttctt tttgtgaccc agcagaatgc ctgcacaggc 24720
attttagtct caggccaaag attggaacaa ctgctttggg gcttggtagg gaccttcaca 24780
gccatattgt ggaaaacacc tcagcagtat gtgctggaat tgtgctttcc cccatcgcag 24840
cctcggggca acagaaaagc tgctacagct gtaatttctc ccaggtgatg aaacttgcag 24900
ccagggccag cttggagacc tacaaccagt ctgcaggtgt cattgctggg tgccccagcc 24960
tgttcccctg agaatgtgat acagcagggc tttctctgct tcacccccag gcagaaattc 25020
aggcattgga gcacctgtct acctggacca gcatcctgag ctaccccacc gtttataaac 25080
ataggttgtg gtgcagtggg gccctctcca gtctatggcc aggcagattt ccaggtatgt 25140
ggagtaccca cttgactgga tcagcagcct gagcttcccc aaccttcctg tgctgagatt 25200
atagtgcagt gaggccctct catctccaca cataggcaga cctccaagca attagagcac 25260
ctgctcctat ggagaactta aatttacaag aaaaaaaaaa aacatcaaaa attggccaaa 25320
ggacatgaac agacaattct caaaagaaga catggatgtg gccaacaaac atatgaaaaa 25380
aagctcaaat cactgatcat tagagaaatg caactcaaaa ccacaatgag atactatctc 25440
aaaccagtct taatggtgat tatcaaaaac tccagaaaca acagttgctg gtaaggctgt 25500
ggagaaatag gaatgttttt acactgtttg tgggaatgta aattagttca ttcactgtgg 25560
aaggcagtgt gaaaattcct caaagatcta gaaccagaaa tgccatttgc cccagcaatc 25620
cctttactgg atatatgccc aaaggaatat aaatcattct attataaaga tacatgcaca 25680
gggctgggtg cagtggctca cacctgtaat cccagcactt tgggaggcca aggcgggtgg 25740
atcacctgag gacaggagtt tgagaccagc ctagccaaca tggggaaact ccatctctac 25800
taaaaataca aaaattagcc aggtatagtg gtgcacacct gtaataccag ctactttgga 25860
ggctgaggca ggagaatcgc tggaacccag gaggcagagg tcaaagtgag ccaagatcat 25920
accattgcac tccagcctgg gcaacaagag caaaactcca tctcaaaaaa atatatatat 25980

atacatatac atacatatat atacacatat atatacatat atacagatat tatatatgta 26040

aatgtatata tatgtgtata tatatacaca catatatata cacatatata tacatattat 26100

aactacatat atatacacac acacatacat atacatgcac acatatgttt attgcagcac 26160

tatttacgat agaaaataca tggaatcaac ccaaatgccc atcaatgata tattggataa 26220

agaaaatgtg atatatattc accatggaat actatgcagc cgttaaaata aatgagatca 26280

tgttctttgc agggacatgg atgaagctgg aagccatcac cctcagcaaa ctaacacagg 26340

aacagaaaac caaacaccac atgttctcag tcgtaagagg gagttgaaca atgagagcaa 26400

acacatggat acatggaggg gaacaacaca cacaccaggg cctctcaggg ggacaggggg 26460

taggagacca tcaggacaaa cacgtggata catggagggg aacaacacac accaggacct 26520

ctcaggggga caggggtag gacaccatca ggacaaacac gtggatacat ggaggggaac 26580

aacacacacc agggcctctc agggggacag gggtaggag accatcagga caaacacgtg 26640

ggtacatgga ggggaataac acacaccagg gcctctcagg gggacagggg gtaggagacc 26700

atcaagacaa acacgtggat acatggaggg gaacaacaca caccagggcc tctcaggggg 26760

acaggggta ggacaccatc aggacaaaca cgtggataca tggaggggaa caacacacac 26820

cagggcctct cagggggaca gggggtagga gaccatcaag acaaacacgt ggatacatgg 26880

aggggaacaa cacacaccag ggcctctcag ggggacaggg ggtaggagac catcaggaca 26940

aacacgtggg tacatggagg ggaacaacac acaccagggc ctctcagggg gacaggggt 27000

aggagaccat caggacaaat agctaatgca tgcaggacct catacctagg tgatgggttg 27060

atgggtgcag caaaccacca tggcacacat ttacctatgt atcaaaccta tactttctgc 27120

acatgtatcc cagaacatga aataaaattt aaaaaatata tacactgatt catgatctcc 27180

tttctctcct tctgaaacac tctttaaaac tttttagcat ttccccctct gtcttccatg 27240

tctcctaact acatgtttct tattttccat gtctttattc ctgtgttcat tttggatagc 27300

cccttctgac ctatattaca gtttactagt tcactcttca actgcttcta acatactaat 27360

attctgttaa aaccattcat ttgggtttaa atttcaatta tgttattctc tatggacatt 27420

ctatttgttt tcttttaatc ttcttggcca ttctctagag tttcctgttc cattatgata 27480

tttttaattt tttgttttac tttaaacata ctaaatatag ttattttatt ttattttctg 27540

tatctgatac tttcaataac tgcagtcttt gctagtcttt tttctgtgct cttgctcata 27600

gttttttca tttgttttca tgattagaaa aacagagaga gaagaaggag agtaaaggga 27660

ggaggaggag gaggagaaaa gaagaaagca gagaagaagg gacagagaaa aaaaggaagt 27720

tggttctaac gtttctctaa caactggctt cagtgaaaca ctcccacctt gtggattttt 27780
aggttattga aattaaccag tcttctgggt gcagcacacc aacatggcac atgtatacat 27840
atgtaacaaa cctgcacttt gtgcacatgt accctaaaac ttaaagtata ataaaaaata 27900
aaataaaaag ctacacaaat ttaaaaaaaa agaaatcaac ctaattccta gattaccacc 27960
tattgattca aatgctttaa atctaggctt ttcatctgag tctttctttt tagttattct 28020
gtttatcttc aaaacactcc tgctttgaat cattcaaaat ctacctccct ccctctgttt 28080
gactaccatc aatttttttg ctcattccta atgcattaat ctattagctg tgaatatcca 28140
aaaaccctca tttcactgaa tctttgacag accccttgc atcttcttgt tcttctaatt 28200
atttcctcag aaactttatg ttctcttttc tttacaagca tgtcatagtt tatatataat 28260
gtgtgtattg tttttatata tacctatata tagcctcttt ttaaaagcac tatacaccat 28320
gatttgaaat atattctaaa atcaggtagc atgaaaatgg aaacataaca tactaaaaca 28380
tatgggatgc aacaaaagca gttataagag ggacatttat agcaataaat gcctacatca 28440
aaaaagaaaa aaaagatctc aaataagcaa cctaatatta tgcctaaagg agcgagaaaa 28500
ttagagaaca atacaagccc aaagatagca gaaggaaaca aataacaaag atcagagcag 28560
aaataatata atagaaactg aaaatttcaa taaaaataag aattgttttt tgaaaagata 28620
aacaaaatta acaaattctt acatagacta agaaaaaaga aaacaaactc agaagtgaaa 28680
gaagagacat tacaactgat accacagaag ttaaaaaatc ataacatact actataaaca 28740
attattcacc agcaaattag ataacctaga agaaattgat aaactcgtac caaaactgaa 28800
tcatgaagaa ttcaaaattt agaagaaatc atgaataagg aaattaaatc accaatgaaa 28860
ggtctctcat aaaagaaaga cccaggattg aatggcttgg tggctgaatt ccaacaaaca 28920
cttagatgac taacaccaat ccttcccaaa ctcttccaaa aaaagtgaag aagaggaata 28980
cttccaaatt catttttcaa aaccagcatt accctgatac caaaaccaga gaaggacact 29040
ataataaaaa taaattgcag accaatactc ctgatgaact tggatggaaa aaccttcagc 29100
caaatattag caaatattat tttaaaaaaa acacagcaaa aaaattcacc atgcttaagt 29160
gggattcatc cctgggaagc ttattagtct tatttgattc gtataatcag aaaatttcta 29220
tgtctagtga agagaaatga gagcaataga gactcatagc acctcaacaa atgtccaggc 29280
ttgagccagt taacaaatac aagtccttca aatacaaaaa agactgtgaa agaaaataga 29340
acagatcaat gaaactaaga atttgttctt tgaaaagata aaactgacaa accattagct 29400
agactagaaa aatgagagaa tactcaaagc aataaaatca gaaatgaaag aggaaatatt 29460
gcaactaata ccacagaaat acagaggatc ataagaggcc actataaaca attacaagcc 29520

aacaaattgg ataacctaga aaaagcagat aaatttctag aaaaatgcaa cttacctaga 29580
gaaagtcaag aagaaagata aaatctgaac agaacaatac tgagtatgga gagtatatca 29640
ataataaaac atctcccatc aaagaacatc ccaggaccag aaaacttcat tgctgaattc 29700
taacatttta aaaaataata atacaatcct tctgaaattc ttccaaaaac ttgaaggaga 29760
aagagtgttt ccaaactcat tttaaaagat cagcattatt gttttttttt taaagtgatg 29820
ttccccttcc tgtgtccatg tgttctcatt gtccaattcc cacctatgag tgagaacatg 29880
cagtgtttgg tttttgtcc ttgtgattgt ttgctgagaa tgatggtttc cagcttcatc 29940
catgtcccta caaaggacat gaactcatca tttttatgg ctgcatagta ttccatggtg 30000
tatatgtgcc acattttctt aatccagtct atcattgttg gacatttgga ttggttccaa 30060
gtctttgcta ttgtgaatag tgccacagta aacatacgtg tgcatgtgtc tttatagcag 30120
catgatttat agtcctttgg gtatataccc agtaatggga tggctgggtc aaatggtatt 30180
tctagttcta gatccctgcg gaatcgccac actgtcttcc acaatggttg aactagttta 30240
cagtcccacc aacagtgtaa aaatgttcct atttctccac atcctctcca gcacctgttg 30300
tttcctgact ttttaatgat ggccattcta actggtgtaa gatggtatct cattgtggtt 30360
ttgatttgca tttctctgat ggccagtgat agtgagcatt ttttcatgtg tttttggct 30420
gcataaatgt cttcttttga gaagtgtctg ttcatatcct ttgcccactt tttgatgggg 30480
ttgtttgttt ttttcttgta aatttgtttg ggttcattgt agattccgga tattagcact 30540
ggggcctgtt gtggggtggg gggaggggg agggatagca ttaggagata tacctaatgt 30600
taaatgatga gttaatgggt gcagcacacc agcatggcac atgtatacat atgtaactaa 30660
cctgtacgtt gtgcacatgt atcctaaaac ttaaagtata atttaaaaaa taaataaata 30720
aaaataaaaa taaaaaggca aacaaggaca ctataagaaa agtatgggcc aaacaatatc 30780
cctgatgaac acagatacaa aagtcctcaa aaaaaagtac tagcaaacag aatttaacaa 30840
catattagga gaacatttac catgataaag tggatttatc ctccagatgt ttcagcaaac 30900
acaaatcaaa tgtgataaac cacattaaca gaatgaagga taaaaaaata gctatctcta 30960
tatatgcaga aaaagcattt gactaaattc aaaatcctct catgactaaa cctctccaca 31020
aattgggcat agaaggcatg taccttaaca caaaacagga catatataac aagctcacag 31080
ctcacatcat acccaacaat gaaaaagtga aatcttttct gctaagatca aaaacaagac 31140
aaggatattt attctcacta cttctattca acttatttct ggaagtccta gccagagcaa 31200
ttaagccaaa taaagaaata aaagattcaa attgaaaagg aagaagtaaa attgtctctg 31260

tttgatgaca tattatatat aggaaaccct aaaaactcca ccaaaaagct atcagaaatg 31320
ataaatgaat tcaataaaat ttcagaattc aaaatcaatg tacaaaactc agtagtttct 31380
ttacactcac aacaaactat atgacaaaaa taaagaaatc aatctcattc acagtagcat 31440
caaaaaaaac gtattttttt tgtttaggag cacatttagg attgtactta ggagtacatt 31500
taaccaagga ggtgaaagat ctgtattctg aacactataa aacattgatg aaaaattgta 31560
gatgacacaa atacatggaa agatagttta tgttcatggg taggaagaat taatattctt 31620
aaaatgtcct tactgcccaa agcgatttat aggtttaatg caatatttat caaaatttca 31680
atgtcattct tcacagaaat agaaaaaaca atttgaaaat ttatatggaa ccacaaagga 31740
tcctgaataa ctaaaggact cttgagcaat aagaacaaag ctgaaggcct cacaatctga 31800
cttcaaaaca tattacagga aaagaacaaa agaaggaaga agagggtaga ggagaagtgc 31860
agcaagggtg gagggaggtg cccacgctgg gtcggaggag caggaggagt atggagggaa 31920
gactcctggg tggcatggag ctcttgcacc tctaggcact gcccagccct gtgtcagcca 31980
gggctgaacc cccacaggat aaggaagcct gtgtgtgtac caacaatcaa agctacatct 32040
gtgacacaac aggacactgc tatgggcagt ctcagtgttg taactactac tatgaacatt 32100
ggtggttctg gctggcatgg accatcacca tcatcctgag ctgctgctgt gtctgccacc 32160
acagccaagc cagccctcaa gtccagcagt agcaacatga aatcaacctg actgcctatc 32220
cagaagcccg caattactca gtgctaccat tttatttcac caaactattt attaccttct 32280
tatgaggaag tggtgaacta acctccacct gtttccctcc ctgtctgtcc attctggatg 32340
agctctgagc cctgttttcc tgtgaagatt ctttgaattg cagccattct attcacatga 32400
actctcacat ctggagcaca gatggccctc tcaaggtaat ttattgtatg cattgactgt 32460
ttaccaaaca aatgtcttac tatgtactca ggtatattca gcagcattgt cgactgcagt 32520
cccctatgct tgccagaaga tactgtattc aaagtagaag tttcacagtg atgagtaatc 32580
actgcaattt tcccattgct ccatggactc tcggaggccg gtgttctgtt ccctgtaaat 32640
agagatgtac tctgaacctt tctgcctccc tcagctgttc ctagtccttg gtatcagccc 32700
ctggagatgt ccacaaccac ttaggacaaa aggcaaaagt ggaatttcag acaaaacttt 32760
gataggatct tcagtgataa acttggacta actgtggccc aggtatcagc actcccaaga 32820
attgccagga ggaagctttg gcagacacca caggtatggc aaggcctatc tccctctgct 32880
gaatccaaca ggggcaagca agctggcatg tggcttgagg tgacccgaat atgtcagcac 32940
ccctcagatg tctttctttg cacttttgaa aaaaatctca gaatttgctg gcaacatggc 33000
caaataggaa cagctccagt ctgcagctcc cagtgagatc aatgcagaat gcaggtgatt 33060

tctgcatttc caactgaggt acctggttca tctcactggg actggttgga cagtgggtgc 33120
agcccacgga gggtgagcca aagcagaatg gggcgttgcc tcacccagga agtgcaaggg 33180
gttgggggaa ttccctcccc tagccaaggg aagccccgag ggactgtacc atgaggaacg 33240
gtgcactcca cccagaaact atgcttttct catggtcttc acaatccaca gaccaggaga 33300
ttccctccag tgcctctgcc accaaggccc taggtttcaa gcacaaaact aggcagctgt 33360
ttgggcagac accgagctag ctgcaggagg tttttttttt ttcatgccac agtggcaact 33420
ggaatgccaa caagacagaa ccattctctc tcctggaaag ggggctgaag ccagggagcc 33480
aagtggtctg gctcggcggg tcccacccct acagagccca gcaagctaag atccactggc 33540
ttgaaattct tgcacagcag tctgaggttg acctaggaca ctagagcttg gtggggggag 33600
gggcttccac attgccaagg cttgagtagg cagttttacc cccactgtgt aaacaaagcc 33660
accagaaagt ttgaactggg tggagcccac cacaactcag caaggccaca gcagccagac 33720
tgcctctcta gatttctcct ctctgggcaa ggcatctctg aaaaaagggc agcagcccca 33780
gtcagagacc tatagataaa acccccatct ccctggaaca gagcacctag gggaaagggc 33840
ggctgtgggc acagcttcag cagacttaaa gcatctttga aaagcctgat ggctctgaag 33900
agagcagcag atctcccagc acagtattcg agctctgata agggtcagac tgcctcctca 33960
agtgggtccc tgacccccgt gtatcctgac tgggagacac ctcccagtag gtgccaacag 34020
gcacctcata caggagagct ctggctggca tctggtgggt gcccctctgg gacaaaactt 34080
ccagaggaag aaacaggcag caatcttggc tgttctccag cctctgctgg tgatacccag 34140
gcaaacaggg tctagagtag acctagggca aaccccaaca gacctgcagc agaggggcct 34200
gactgttaga aggaaaacta acaaacaaaa aggaatagca tcaacatcaa caaaaaggac 34260
agccactcag tgaccccatc agaaggtcac caacatcaga aaccacaggt agataaatcc 34320
atgaagatgg agagaaacca gagcaaaaag gctgaaaatt ccaaaaacca gaacgcctct 34380
tctcctccaa agtatcacaa ctcctcacca gcaagggaac aaaagaaaac tggacagaga 34440
atgagtttga cgaattgaga gaagtacgtt tcagaaggta ggtaataaca aactcctcca 34500
agctaaagga gcatgtccta acccaatgta aggaagctaa ggacctggaa aaaaggctag 34560
accacttgct aactagaata accagtttag agaagaacat aaatgacctg atggagctga 34620
aaaacacgcc atgagaactt catgcagcat gcacaaggat caagcactga ttcggtcaag 34680
cggaagaaag atatcagaga ctgaatatca acttaatgaa ataaatcaag aagacaagat 34740
tagagaaaaa agaatgaaaa gaaatgaaca aagcctccaa gaaatatggg actatgtgaa 34800

acgaccaaat ctacgtttga ttgctgtacc tgaaagtgat ggggagaatg gaaccaagtt 34860
agaaaacact cttcgggata ttatccagga gaacttccct aacctagcaa ggcaggccaa 34920
tattcaaatt cagaaatatg gagaacatca caaagacact cctcaagaaa agcaacccca 34980
agacacatag tcatcagatt gagcaaggtt gaaatgaagg aaaaaatgtt aagggcagcc 35040
agagagaaag gtcaggttac ccacaaaggg aagcccatca gactaacagc agatctatca 35100
gcagaaactc tacaagccag aagagaatgg gggccaatat tcaacattct taaagaaaag 35160
aattttccac ccaggatttc atatccagcc aaactaagct tcataagtga aggagaaata 35220
aaatccttta cagacaagca aatgctgaga gattttgtca ccaccaggcc tgccttaaag 35280
gagctcctga aggaagcact aaacatggaa aggaacaact ggtatcagcc actgcaaaaa 35340
cataccaaat tgtaaagacc attgacacta tgaagaaact gcattaacta acagcaaaat 35400
aaccagctag catcgtaatg acaggatcaa attcacacat aacaatatca accttaaatg 35460
taaatgggct aaatgctcca attaaaaaac acagactggc aaattggcta aagagtcaag 35520
acccatcagt gttctgtatt caggagaccc atctcacgtg caaagacaca aataggctca 35580
aaataaaggg atggaggaat acttaccaag caaatggaag gcaaaaaaaa gcaggggttg 35640
caatcctagt ctctgataaa acagacttta aaccaacaaa gatcaaaaga gacaaataag 35700
ggcattgcat aatggtaaaa ggatcaatgc aacaagaaga gctaattatc ctaaatatat 35760
atgcacccaa cacaggagca cccagatgca taaagtaagc tcttagagac ttaaaaagag 35820
acttagaccc tcacacaata atagtgggag actttaacac cccactgtca atactagaca 35880
gatcaacgaa acagaaagtt aacaaggata tccaggactt gaactcagct ctggaccaag 35940
tggatccaat agacagctac agaactctct accccaaatc aacagaatat acattcttct 36000
cagcaccaca ttgcacttat tctaaaattg accacatatt tggaagtaaa acactcctca 36060
gcaaatgcaa aaaaaaatgg gaatcataac agtctctcag atcgcagtgc aattaaatta 36120
gaactcagga ttaagaaact gactcaaacc cacacaacta catgtaaact gaacaacctg 36180
ctcctgaaca actactgggt gaataaagat attaaggcag aaataaataa gttatttgaa 36240
accaatgaga acaaagacat aacataccag aatctctggt acacaattat agcagtgtgt 36300
agagggaaat ttatagcact aaatgcccac aagagaaagc aggaaagatc taaaattgac 36360
accctaacat ctcaattaaa agaactcaag aggcaggagc atacaaaaag ctagcagagg 36420
acaataaata actaagatca gagcagaact gaaggagata gagacacaaa aaaaccttca 36480
aaaaaaaatc aatgaatcca ggagctggtt ttttgaaaat atcaataaaa tagatagacc 36540
actagccaga ctcataaaga agaaaacaga gaagaatcaa acagatgcaa taaaaaatga 36600

taaaggagat accaccactg atcccacaga aatacaaact actatcagag aatactataa 36660
acacctctac acaaactaga aaatctagaa gaaatggaca aattcctgga cacatacgcc 36720
ctcccaagac taaaccagga agaagttgaa tccctgaata gaccaataac aaggtctgaa 36780
attgtggcag taattaatag cctaccaacc aaaaaacagt ccaggaccag atggattcac 36840
agccgaattc taccagaggt acaaagagga gttggtacca ttccttctga aactattcca 36900
aacaacagaa aaagagagaa tcctccctaa ctcattttat gaggccagaa taattctggt 36960
accaaaattt ggcagagaca cacacaaaaa aaagaaaatt tcaagccaat atccctgatg 37020
aacatcgatg caaaaatcct caataaaata ctggcaaacc aaatccagca gcacatcaaa 37080
agcttgtcca ccacaatcaa gtcggcttca tccctgggat acaaggctag ttcaacatac 37140
gcaaatcaat aaacataatt catcatataa atagaaccaa tggcaaaaac cacatgcttc 37200
tctcaataga tgcagaaaag gccttcgaca aaattcagca gcccttcatg ctaaaaactc 37260
tcaataaact aggtactgat ggaacatatc tcaaaataat aatacctatt tatgaaaaat 37320
ccacagccaa tactgaatgg tgaaaaactg gaagcattcc ctttgaaaac cagcacaaga 37380
caaggatgcc ctatctcacc actcctattc aacgtagtat tggaagttct ggccagggca 37440
atcaggcaag agaaagaaat tgtctctgtt tgcagatgac atgattgtgt atttagaaaa 37500
ccccatggtc tcagcccaaa atcttcttaa gctaataagc aacttcagaa aagtctcagg 37560
atacaaaatc aatgtgcaaa aatcaagcat tcctatatgc aaaaaacaga caaacagaga 37620
gccaaatcat gagtgaactc tcccattcac aattgctact atgagaataa aatacctagg 37680
aatccaactt acaagggatg tgaaggacct cttgaaggag aactacaaac cactgctcaa 37740
ggaaataaga gaggagacaa acaaatggaa aaacattcca tgctcatgga taggaagaat 37800
caatatcatg aaaatggaca tactgcccaa agtttttata gactcaatgc tatccccatc 37860
aagctaccac tgactttgtt cacagaattg gaaaaaacta ctttaaattt catatggaac 37920
caaaaatgag cccgcagagc taggacagtc ctaagcaagt agaacaaatc tggaggcatc 37980
acgctgtctg acttcaaact atactacaag ccttcagtaa ccaaaacagc atggtactgg 38040
taccaaaaca gatatgtaga ccaatggaac agaacagagg cctcagaaat aacgccacac 38100
atctacaact atctgatctt tgacaaacct gacaaaaaca agcaatgggg aaacgattcc 38160
ctttttaata aatggtgttg ggaaaactgg ctagccatat gcagaaaact gaaactggat 38220
cccttcctta caccttacac aaaaattagc tcatgatgta ttaaagactt aaacataaga 38280
tctaaaacca taaaaaaccc tagaagaaaa cctaggcaat atcattcagt acataggcat 38340

ggacaaaaac ttcatgacta aaacaccaaa agcaattgca acaaaaacca aaatagacaa 38400
atgggatcta attaaactaa agagctcctg cacagcaaaa gaaactatca tcagagtgaa 38460
caggcaacct acagaatggg tgaaaatttt tgcaatctat ccatctgaca aagggctaat 38520
atccagaatc tacaaagaac ttaaacaatt tacaagaaaa taacaaacaa acccatcagt 38580
gggtgaagga tatgaactga catttctcta aagaagacat ttatgcagcc aacaaacata 38640
tgaaaaaaag ctcatcatca ctggtcatca gagaaatgca tatcaaaacc acaatgagat 38700
accatctcac gccagataga atggcgatca ttaaaaagtc aggaaacaac agatgctgga 38760
aaggatgtgg agacataaga atgcttttac actgttggtg ggagtgtaaa ttagttcaac 38820
cattgtggaa gacagtgtgg tgattcctca aggttctaga actagaaata tgatttgacc 38880
cagcaatcgc attactgggt atatatccaa aggattataa atcattctac cataaagaca 38940
catgcataca tatgtttatt gtggcactgt tcacaatagc aaagacttgg aaccaaccaa 39000
aatgcccatt caatgataga ctgcataaag aaaatgtggc acatatacac catggaatac 39060
tatgcagcca taaagaagga tgagttcata tccttttcag ggacatggat gaagctggaa 39120
accatcattc tcagcaaact aatccaagaa cagaaaacca aacacccgat gttctcactc 39180
ataaatggga gttgaacaat gagaacacat ggacagaggg aggggaacac aacacaccgg 39240
ggcctgtctg gggggtaggggg ctaggggaag gttagcattg ggttaaatac ctaatgtaga 39300
tgatgggttg atgggtgcag caaaccacca tggcacgtgt atacctatgt aacaatcctg 39360
catgttctgc acatgtaccc cagaacttaa aatataattt aaaaaaaaat ctcaaacaac 39420
tcactgaagt gtctcaaagc tgaacaagtt ttaccaaaat gaatccttct cagttaactg 39480
atcaaatgga tgaatcctga ccctctgaag tctctttcct gagttagagc agggaactgc 39540
tctgagtgtt aactgttgga ttcactgcag tgtcctacaa tattttacaa gaagatgaaa 39600
aggcaacctg cagacctagg cttgattccc aagtcacagt ctgacccctg ctacaggagg 39660
ttaccctcct caggaagaga tagaaatagg gaatttgaag gaatagtgag gggaccaggg 39720
agatttgatt gagtctggtt tccaggtgaa ttaaaaggaa gggtgtcatc cagggtttgt 39780
tgctatagtc aaaagaataa ataaatcaat gaagaaatac cttcattgtc tgtggttttc 39840
atgcagatat actcatggag gttgtatctc tccaaaaaca gacaaatcca aggctgtgaa 39900
caagcatcca catttgaatt ccattaaacc aaaatctatg ttgaacgaag tgaagtctgt 39960
acacagcatt gcaaatgtga acacattcct gtgtgaggca catcaccatt tgtcagttat 40020
tgtgaatatg tgtattttta agcaataaga tgcagctggt cagttttctg ggcaatcttg 40080
gcgaggcatt tcctgtgctg tggttgttct ctaaccactg tgagaaaccc aaataaaaat 40140

cgatcccccc ccaaaacaaa tacgtatcac aaaaccacag taatcaaaac aacatgacac 40200
ttgcacaaaa acagacacat tgaccagggg aacataataa ggaacccaga aataaactca 40260
tgcatttatg accaagaaat ttttgacaaa ggtgcccaga aaacgtaatg aagaatagac 40320
atttgtttca ataaatggtg ttaagaaaac tagatatcca catgcagaag aacatgaatg 40380
tgtatggtgt gtatccttat ctcacaccat acacaaaaat caattcaaaa tggattaaag 40440
gtttaaacat aaaactgtaa aactactaga tgaaaacata ggggaaaagt tccacaatgt 40500
tggtttggtc aaagatttct tggatataac ccccaaagca caggcaacaa aagcaaaaat 40560
atatgggatt gcatcaaact aaaaagcttc tgcacagcaa aggaaacaat atggtgaaga 40620
gacaacctac aagttgtgag aaaatatttg cagagcatac atctgatgaa aggctaatct 40680
ccaaatatat aagggactca actcaatatc aagaaaacaa ataaccaagt caaaaaatgg 40740
gcaaggtcct aaatagacat ttctcaaaaa aaatacaaat gactaacata aaaaaagttt 40800
gtcatcctaa ttatcaggga aatgcaaatt aaaatgacag tgagatgcca cttcatacct 40860
gttagaatgg ctactatcaa aatgataaaa gataacaagt gttgaagagg atacagagaa 40920
aagggaaccc tcgtacactg ttggtggaaa tgtaaattaa tactattatg aaaaatagat 40980
aaaagttact caaaaaacta aaactagaat tactatatga tccagcaatc ccacttcctt 41040
gtatatatcc aaaggaattt aagtcaatat gctgaagaga tatctccagg ctcatgttca 41100
ttgcagcatt attcacaata cccaaatatg aaatcaacac aggtgtctat caactgacaa 41160
atggatgaag aaaatgtagt gtatatatac aatggaatac tactcagcct taataggaag 41220
gaaaacctga tatatgtgac aacatgaatt aacccagaag atatcacgct aagtgaaata 41280
agccaggcac gaaaagacaa atatcacatg atctcactga tatgtggaat ctgaaaaagt 41340
tgaattcata gaagtagaga atggaatggt gattatcaga ggctaggagt tgggggtaga 41400
catggaaaag gtagatgttg ataaaagggt tcaaagtttc agttagacaa agtttcagtg 41460
aactattgca cagaatggtg actgtaataa ataacaaggt attgtatgtt tcaaaatgac 41520
taacagagta gattttaaat gttttcacca caaaaaagat atgtatgtca ataagacaga 41580
cctaatcttt ccacaattta aacatgtatc aaaacattac attgtacccc atagatacaa 41640
ttattatttg tcaatttaaa atttttcact aatttatatt gttattgttg caccaactcc 41700
tttccaccag gcagattctc ataaagacta ttttctctct tacatgaagc atttcctaca 41760
cacctcttaa tcacggtagc attgacatca ttccaccaga ttctatctcc agtgttaaaa 41820
taatcaagaa cccagaaatc tccaccaggg ggcaaccaat gcgtatcaaa gtttcccact 41880

ttcctttaga tttacttatg ggtaacttat gggaaaaaat acttaagtac ttccctttttt 41940
aaagaaaaaa attatatgaa ttctacaaaa ttatggcaga aaatttaaga agagcagatg 42000
cttcccaact cattctaaag ggccagcatt accctgattc tgaaatgaaa aagctttaca 42060
aaatccaaga tccattcctg actaaagata aaagaaattt tcagcaaact gtgaatacag 42120
aaaactttct cagcctgtta aagagtacct atgaaaaaaa ttatagctaa cattatactt 42180
aatgatgaaa tatttaatat atttcataac aggaacaagt caaagatgtc tgctctaact 42240
aattctactc agcattcaac aaaatgaata tagtgaattc atactagaat tttaaaagca 42300
aatgtcttta ttcactgaca acataatcat ctataaagaa aatcctacat aacctataaa 42360
aaactgatgg aactaataag ttttgcaagt ttacaggata taatgtcaaa caaagatcta 42420
ttatgtgccc ataagctaag aataaacaat tgtaaattga aataaaaatg tcacttaaaa 42480
gggcatcaga aatataaaac ttagagataa atataaagta catatgcata aagtacctgt 42540
tcaccaaaaa ctacaaaaca ttgctgaaag aaattaaatg ggcataatat agatgtagag 42600
atgtgttgaa tttatgactc attttgaaca aggaatatat tcatcatata ttcatcagat 42660
aagaattatg ttacaggtct aataacattc aaatcaatac ataatgtctc atagttcctg 42720
aatctaaaat atcaaagaaa gaaacataaa gccatatcat gtttaacgag aagggcttat 42780
tatatcattt atgagatcct cttgtaaatc actagctgtt tgcatactct ctttattgct 42840
gccttcatct ccttattcct gaatgtatag acaactggat tcagaaaagg agtgagaact 42900
gcatcaaaaa tagccagaaa cttgtccatc tgtgaattag ggtgtggccg tgtatacaca 42960
aacatgggtg gaccaaagaa caaaaggacc actgtgctgt gagctgaaag agtggaaagg 43020
gccttggatg aaccacctga ggaatgtttc caaacagtaa acaggatgaa gacgtaggag 43080
attagaagta tgaagaaagt acccacacag ataaacccac tgttaacagt gaccatgaac 43140
tgcaatctgt aggtgtcggt acaggctagt ctgagaagcc gaggaaggtc acagtagaag 43200
ctgtccaaca cattagggcc acagaaggct aaattaacaa gaaatgccag ttggaacagg 43260
gagtgactga caccaagggt ccaggcaaca gccagaaatg aaaggcacat tcttgggctc 43320
ataatggtca gatagtggag gggcttacat agggccacat atctgtcaaa ggccatggct 43380
atgagcagca ccatctccac accaccaatg acgtggatga agaagatttg agcgatgcag 43440
cctccaaagg agatgacttt gcgctttctg aacaggtcat aaatcatctt gggagaagtg 43500
acagagcagg ctcctaagtc aatgaaggag agactggcca gtagaaagta catgggggag 43560
tgtaagtgag ggtcagtggt cacagaaaac acaatgagga tgtttccagt aatgcttgcc 43620
acatagagca cagaggaaaa cactaggagg aggagctgga tctcccatga atgagtgagt 43680

cccagaaaca aaaactcaga taccactgag tgattctctc catccattgg tccagccaac 43740
tgggctgtgg ctaaaattat gagaactaag aaaatgggga ggaaattgtg attatgaaga 43800
taataatatg tactaaaatc aatattgcaa tgtcactatg aataaatagt atacagttat 43860
tctgttcctc acatattaaa aacaaaaaat caacataata ttatcacaac atgtgagctg 43920
caacctgatt taaacccatc atcaatactt tcagtgtaat gtctgatcta aaattaacag 43980
attaggtaag aacaagattc ctgactatcc atgaaattca tcaggtgttt aaatgacctg 44040
tgatattaac tattcctcat ttccaacata ttccatttgt acttatacat attcttataa 44100
tttccttccc ttcccagttt gcacccacaa ttctctgaca gaaagtagac ataagaggaa 44160
aacatgatta acagatggat tatcactgca gtaagaggtg cctgggacgg acttagttga 44220
ggtaggctgt ggattgagag aatatagaga ctggggtatg tgaaatcgga aagcccacaa 44280
ctgtagcaga ctagagtaag tggactttca caagaaatag aatcaccacc attatctacc 44340
acattttctc atgcttactg ctatttaagt gcctcagttt ctatacaatc tttcacaatt 44400
acgaagccct aaatggcttc ccatcctgca atgatttcat aaggagccta tgccacctgt 44460
catgtaaggc tttttccatg cctaataaat atgttttgga gggatttcac cagtgtttct 44520
gctaagatac atgcataaaa tggccacaga ggttgtgaga aatctctgca gtttctcttt 44580
gtctatacac atgaaagtat tgaagaccag cacttggatt agttaagata atgttttaat 44640
tcatcactgt ctcctcctcc ccttggtacc agcttttatg ttcattgcat tccccacccc 44700
tttaagtact cagtacctcc tgcatggtaa cctattctga tatttgatat tatcatgctt 44760
aatttgactg aatccatttg gatattttat ctttaagaaa tttgtagttt tatactttta 44820
atttatgata aaattagatt aatatcaaac attaacaagt gacttttagg aaggtatatg 44880
agctttctta ttgacttcaa actataaagt acaaactgtg acactagaaa tttagtcctt 44940
taacacatat tgtatttata tgtgaagtgg agggtgagca gaaaacagtg ttatatttct 45000
ctgtgtccag atggatactc acctcaatca ttttcctata gtagaaagta gttcctgaaa 45060
acacttaata gagattattt tagaagttgc tgaggtacaa ataaaactgc tatgctgaca 45120
tcatactttt ttgcaccaac aactccagtt cttctgacac aaaggaccat cttcctagtg 45180
ccataattta tcttagaccc caaaactcac agaggcacac atcatatctc taatacttgc 45240
tcaccaccac tggcatgagt ctctctctat cctcttctac gtgaagtgat tatactgtca 45300
cctctggagc taactgtcca cagtctcaag atgcacactt ttgacaacca gaagcctatg 45360
gactgggtga gggagcagaa acagccacag gtactgccca tcagggtaat gtaagtcagc 45420

atgcaaacaa ctgatcagat gaacatgaat agcaaggtgc tgaggcactg ggaagaggga 45480

ccggaaaact ctataattgt tgaaaaagac tcaagccctt gggaagggaa atgcctatgg 45540

aattatataa agaccatttt atccaagttg gtcatcattc agatgaaaac catgaggccc 45600

agaaaagtaa actgagtttc cagaattcac acaattgata gaataggaac cagaattcag 45660

gcctcttgct tcctattcca gaaagacaaa ttgcaataat aatcaaataa tatgagcaat 45720

catccagtaa aaataatctg gtaaaaacag caaaactcaa aagagtgatt tttcctggtt 45780

aagaccaaaa ctaaccatag attgctatac atagtatcta ttataaatac tgaattatat 45840

agcagcctga caataaatac ataaaatgtg tacacaaaga ttattgaacc tgtacaatac 45900

agtagtaaat agtaacttta tatttgcaaa gtgactgatc attactatca gaatttgttt 45960

acccattctt catattttgt tggtcatata accagttact acaactgcaa aaacaaccta 46020

aggtcatgtt tctgtgaagt ccatcctttt ggtctttaaa ttttattatc ctcaaaggtc 46080

aattatgatc tcaatctttt cttgtaattt tactgacaat tctccttcac actgattagt 46140

tctttctcta attcctgtaa atggaaagaa ccaaaaaaag ttgaaaaaac atgtattgta 46200

catataacaa acaatcatat gtggtataca atatatatca aatgagtatt aagataaaca 46260

ttcaaagagt tttaaagaaa aaagtgttat agatattgga gggcagaaga tacaattgcc 46320

attaagaaca ggtggaggag gttatgccaa ggacattgac ctgacccttt aggaattagt 46380

gaaaattgaa taggagaaga atgaggtaca caatgtgtga aaaataccta aattgatata 46440

acaggaggag acctttcat atcaattatc attacttctg tgtatataac catattagat 46500

acccacaaac aaatagaaag tggatagttc ttgattgaca agtaggacta ataatcccag 46560

atcatagtaa ggtcttaact tcaagtcaat aatctttatt acttatggtt cattcctctc 46620

cctcatgttt tccaataatt ttaaaatgca taattaaaac aattctcatt taaaaacata 46680

gtagccatga ctaatgatct tccagtggga aggtactaag actttacaac atgtttcttg 46740

ctggggataa gacagcctac agccagcatt caactcattt ttctaaagtc tatggatcaa 46800

tttgaaatac agaaaaagca gaacagagat aaagttaaaa aaagattaaa aatatgggaa 46860

gaatgggaga aaggggaaat tagaagatat gaacaatgat ttaaaaataa aagagcctca 46920

aaggagaaga gaaactgcta agcaagacta aggtaggatg aaatacagta gtctctgttt 46980

ctgagaacac aggttaaaaa gaacataaat aaaataaatt tatcaccttt aatacactca 47040

ttcaaggatg ctactgagtt tgactctggg aatttctcac ctttaacaca ctcatttggg 47100

gatgctacgg actttgacat tgggttgcat ttaaaggggg agagaaaggg cagttgcttc 47160

tattatctgc ccttttggac tcacagagtt tctttgaaaa gcacagatga taataaatgg 47220

aaatattgcc ttttatacta tacaataata tacacatgca attcactgga aaaagtatac 47280
ttgttattat gatttgagga tactaccata tactaatcaa gagaaacaca tgtacagaac 47340
aaagaaggca catgaaattt ttactagtgt gtgttttcct tgtgttctac caccccagga 47400
gcagcttctg ctactgaagg tcacagtaga gttatttcca aaagttgtgg gtctgcaggg 47460
tggacttatc acatagctgt ttgccaaaat tcaaaagtcc agaaaccatt tccaaatttt 47520
cacctctttt atcttcaaat cctaaaacta tgaaaattca caaacttagc tccatacatt 47580
atggtagaaa ggttaataat ttggactttg aggttgacca ggcctgattt ttgaataaat 47640
tcacaaactt acctccatac attatggtag aaaggtcaat aatctggact ttgaggtcga 47700
ccaggcctga tttttggatc caggctgcaa cactcacttg ctgtgttaac gtaacaaagt 47760
tcctagacca tgctgagctt cagtttactt gttattgaat tagggatata gcgttcgaag 47820
gaagaagttc tagtatttga ttgcacagca gagaaattat agttattgaa ctggggatat 47880
gtagatagac ataataaatt ttagtattca attgtacaat ggagaaatca tagggaacaa 47940
taatttatta tatattctaa aatagctagc agagaaaaat tataatgttc ccaacacaaa 48000
gaaaagataa atattcgagg tgatgaatat ccaaattact ctgatttgat cattacacat 48060
tgtatacatg tatcaaaaat atcacatgta ccccaaaaca tgtacaacta tgatacatca 48120
ataaaaaaca acaaaaaaac caaaagaata gaaatcaaaa ataaatacat aaatacataa 48180
aatagggata ataatacctc ccttgcttgc ttgctccctt gctccatttg taagaaataa 48240
gtgatataat ataggtaaaa atacttaacc tcatacctac cacatagtat agcacaataa 48300
acgttattta ttataatctg aggcctacct acataagtga ctttcaagta tagaaaatta 48360
tttctcaaat tttaaatact ccctgattct caggtatggt aattagacct ggctttaggt 48420
aaagctctca tgtctacact tggatttaat cacttaagta tatttcccag cacccccccc 48480
aaaaaaaaat tgctcctagg tggacacact aatcaaagac ttcctgagaa atgcaggaag 48540
aagttttgtc ctctgaccac gctacgccct ttccttgatg gtaagcccca taatctaaag 48600
ccataagttt caattcctca cataaaaaga aaaaaaatgt cttttatgac cacttcagat 48660
aacactggat atttcccttg tcattaggaa tgagaaatgg gaggaaggta aacttgtaga 48720
caggagaatt ggtagatgct tgaaaggatt tctgaaaact gtgcctatcc aggtgtacaa 48780
atgtgttgac cagccaaggc aaagcagtca aaccatacaa taccttatcc tcaggaaaat 48840
ggacttttct cccaaattgc ctttttcatg aaaaatataa aattctccag tttcaacctc 48900
atgctaaatt tcacatgtga agaaaacagt catgcacatc agaaaattaa atggcgagtc 48960

aagaccaaac tcctagtcac agttatgttc tgtttccagt attaccttct cacttattca 49020
ttttgttaaa gtggagccaa aatagaagtg ggtgtcacac atcaagaaag actgaagtcg 49080
tacaaagccg atccttatcc aacgtgcatt aaaatatgca tcaggcatgt gtgatgcata 49140
tagtagaagt ggaacaaatc aggccatgtg cagtggctca cgcctgtcag cccagcactt 49200
tgggaggcca aagcaagcaa atcgcttgag atcagcagtt caagaagtgt aacaaatcct 49260
ctacaatata agtagagtga aaagagatag ctacagtgat gagggaaggc actatagtga 49320
tgtggcattt gagtatagcc ataaaagagg ataaatatta caatacaaga atatagggtc 49380
taaagaagtc ttttcaagta gattgtaaaa tatttcaaaa atggtaagtt tggtgtatgt 49440
tgaagcatac agattgtcta catcctaaaa atcattttgg tgaagaaagg aaaataagaa 49500
aggtagtcaa tattcatttg ttgcctatca ttagaaactt ctcaaaggta tatgagaatt 49560
attaaataaa tttagggagc cagtgaaggt atgggtcccg ggaattgagg atgaagccag 49620
taattaggga agatgcccca tctataagtg cgatgtatca aatggaggaa aagaaaaacg 49680
gagggaagga gttcccttaa gagaagattg aaatagagca gacttggggg gctacacaga 49740
ggaactggga ctacacagtt ccagctttaa ggctatagaa acagaaatag atatactggt 49800
aagtaaaaac ccaaaggatt ggtgacttat cacagctgga gtgaatacga aggagcatga 49860
actcaaagaa aatatcaaga tttaagcaag aataaatagg acaatggtag gtccattttt 49920
agaaattaga aagttgaaca taaaatatgt cagggtggag aaaataatca catgtatttt 49980
aagcaaataa gagtattaga tattgagatg ctcaggtgaa aacatatgac aggatatatg 50040
ggggaaaagt acaaattcaa catgtaattg tatagtaatc catataaaaa taatagacgg 50100
atgtgtaaga gtgcataagg tccctgaagg aaataataca caggaaaaaa agattaaaaa 50160
gcaaagaccc aactatagaa actatccaca ttgattatgt aaagtaggaa aaggaatcaa 50220
taaactagac agaacatcac agaggtagga ggacaagtgc tggcctagag gagccaacac 50280
agaagcaggt atcaagaata aaggaggaga agagagaaca aagagagaga ggagagaact 50340
tctgtggcag aagatcaagt gggatggtag aataaaggag aagaaataca agaaaattga 50400
aataaaattt acagaaatgt tctacattgt cagtgggcag ttttgacctg gcacattgtt 50460
ggcacacatt ataaatgtca aatgtattaa tgaatgaatg aatggataat ataatgaatg 50520
tgatggagtt gtcaaaagct gaattaatta aaagtcccca cgagaggtta gatgacaaaa 50580
ttttcagaaa ctttccatgc cactctgttg tgacatcaac agtgctggac ccttgaaatc 50640
aaaccaaaag gattccacca tgagaatgaa aagggctgag aaggggaatg ctgggtgaca 50700
cagaaggtga caaagggcga aaggtttcta ggcatttgat agactgatgg acgtccgagc 50760

tgaccataag gcacaggcca cacaggaagg aaaatgagac ccaacgcgaa gaaaagtagg 50820
gctaaacagt cgggaaaatg tgggaagaag gatgaatagt catactatca actcagattc 50880
ctccctgaca ttcttctaca gctttattct cgtcctttgg gagccgagat gttcattttc 50940
ctacactctt agctgcctac acacggcgac ttttctccac ggtgcctgat ccctgctgca 51000
tcctccttct ctagtggcaa cagcaaatgg ccacacagaa ggcagacatt gcacccaact 51060
gaggagaatg taattcactc attgccagtc acagaccttg gctcaccgat ttactaagta 51120
tagattttat ttctatccct cacctacctg ttttgccaag ggaactaaga aaagagcatc 51180
atcaaaaatt cagataggta tagttctcac aagatgaacc agatccagta cggcatcact 51240
gcagacatac acacagagct gcataaaaca ggaagagagc tgctaatcac agccccagag 51300
ggtagtggcc aaagtgatgc cttggagatc tgagaatgcc agactgagat cacacggcct 51360
ggggaattac cgcctatggt cattttggtt ttcccgggat ggccaagccc agaaactgtt 51420
aattgggtga aataaagcat atttgatttt cttatgacaa aaaaggcctt ttgccattgt 51480
ctacagatga tactttaaat ctttatttta tgactaaagg tgaattccag agcaacatta 51540
aatgttgtcc ctttaaattt ttaatcattt acataacgat taccataata ttcaatttaa 51600
acataaaatg taattgaaag tatgagatta atatgtggac atgaaatcat ataatattcc 51660
atggaaaaaa cagaatgtat aaggcaaaga ggtttaaagt aacatcaaaa ctaacgctca 51720
ctatacaaat tctatgaaat cctcataatt acactgtgaa gcaggtgttg ttagagccac 51780
ataatctcaa acaaattatt tattatctaa aattacatag atattaaaag gttaggccat 51840
atatgaattt aggattctct caaaaatttt ttctctttct cctacatcaa acttccctaa 51900
attatagaaa agtcacaatg ttaccaaaca tattcacaaa acacatataa tcttgaatcc 51960
aaatttcagt tacagcagaa aaaataaaac tctagatcaa tctcaatcgt gtaaataaat 52020
tcagatttcc aatctaagag tctcaatttg acatacttct ttctctctct tctttcaaac 52080
caggagaaat ataaatatga gccacaacct tacaaaagct agaaaatatt tacaattcca 52140
cacaacaaca catgaagaaa accttctgga catcaaaagt ttaaactagt caagactgaa 52200
caccaagata aagtgcatgc ctctgaagag ctctgagcta gtcaagaagc ccagaaatcc 52260
ctaaaagagg tgtgtatact gaggagtgag gatcaaaacc tgtgatcttt acttggaaca 52320
gaaatattgc agcatgtgaa ccctccacag agtgacagag ggaaaggagt ttaaagggaa 52380
acatgcaaat gtatcacctt tggaataatt aggacacgtg tgtggtgtaa tgaaagaagg 52440
caaaaagatg ggaagaagc cagacagatg gcaattttca ttctattatg aaaagaaaag 52500

gataagtcac aagtcacatg atgaaattaa caactatgaa tccactctaa gccatagtca 52560
atcctatagc ctaggagtca ttctaacaga tgagagtgtt ttggagacaa gattccaaaa 52620
ctcgtctgcc ttccatcata cttactaccc ccagctcctc ctccacaata tcctttcaca 52680
agtatctaga atattcaaag actaataata ttatataatt atttataata attgtattac 52740
aaaaataaaa cttgatgacc tttataaaaa tactagaaga aaaagggaaa attacataag 52800
gtacagaaca tacaaattat accatgaagc agtaaaaaat aggatcaaat tttctatgtt 52860
ttttaaaaat atgccttctc taaaatgttt tctctctgaa atgatattta gaagacataa 52920
ttgaaaataa atacaaaata aagtgataaa aaataatctg gcaaaattca ggatgtaatg 52980
agtaaagaca accatgaaag aaatgaagat caataaaagc aggaaaaaaa gtgggaagtg 53040
gagagaataa tgctgctaaa aacacagata agaatataaa tgacaggctt aaatatatcc 53100
tgagcaaaac aaaatagaaa acacaagaag gtgaaatgta acattaaagt caggtccaac 53160
aaatgagaaa ttagtgtgaa agagctcaca atatctggtt aaaaaattca aagataaaag 53220
aaaacttttc tgaaatgaag aaaacattga atctaatggt taaagggctt atctttatcc 53280
agaaaaaata tgttatagta tgaccacatc aaggcagatg caactgaatt taccggactt 53340
cacaaacaca aaataaacaa cccacaaaaa aaaaaaaaaa aaaatagagt ccccatgagg 53400
ctttaaggaa gacaactatt agaggccagg cgcaggggct aacacctaca gtcccaacac 53460
tttgaaaggc caaggcagga gaatcacttg agcccaggag ttcaagataa gaccagcctg 53520
ggcaacatag caagacccca tctctatcag aaaaacttaa aaaagaaaac tatccactaa 53580
aaatgaatag agataacatg atacaagtga gcattctgaa gcctaatatc aaaatgttct 53640
ggggtttgcg gttaaagaac agaatgcaaa tgttacaaac cataactgta taaagactaa 53700
ttatattcat aacaaaaata agaagagaaa gatagtagaa atatattctg gtccattcaa 53760
ctttcacagt gggagagaat caacaaatta tgttatgggt gattaaatat tattttaaaa 53820
gataaaggtc attattagaa aaattaaaaa taacaaaatc aaataaagtt gaatgacgaa 53880
ggtgggagac gaaagtgggt taaaggggta aagtggaact atattaaaag agtcaatgga 53940
gagcgccctt ggaaataaca cgaaaattaa agaactaaat ataatttata cagcacataa 54000
ctaaactata aatcttcaaa ttaaaagaaa ataggtacat acaaaatatc acatagagag 54060
aaatattaat accatgaaaa tgttaaaata aaagcataaa attaattcat ttatttaccc 54120
tattagtatt ttttgaacac ctacgtgcca ggtattgtgc tgaatgccag taagatatag 54180
ttcctgcatc ttggagtttt cgtggaggag acagagatta atcaaacaat tacacaaatg 54240
taaaattgca accataaaaa ttactctgaa atacaatgaa aattactgta agagagggat 54300

ttgatgtgag tcagagaagt ttcccctaag aaagcaacac tgaagctgag atctaaaggg 54360
taaacagcag ttaactgagt ggagaacaaa ggttttccta caggggggaac aatctgctcc 54420
ccgaggccag agtggggcct tgggagttgt gcctgaaacc acattgtgag gaagtgaggg 54480
gaagcattgt gcagataatg ctgaaataag tagtggaaga tgcttcctaa gagaatgaga 54540
aatccaagac tactaagcag aagaatgatt tgaccagatt tcacatttgt aaatatcact 54600
atggttacaa tgtatagaat ggattttaag gaattcaaat tggatacagg tgagtcaatt 54660
acaaagcaac atgcttgcca aggcaagaaa tttgattact taaactagat atgggagttt 54720
tggaaataag tagataaatt tgtcatatat ttgagataat aaatcaccat gacttgatgg 54780
tagacttagt tggagatgcc ctcactagtg caccatctaa tgcttcaagt ctaataatta 54840
ttcaattcct ccagagccac caatccaatg gttctaccat atttatgctg tcattcactt 54900
tactgatatc cttcttacct tacctctttt cccactttat attccatgat caataccttg 54960
ctccctcgta atgattgtac tcactcttcc aaacaacaat cctgataaat cctactctct 55020
gccttctaca tcttgatacc acacagctat atgtggctag ataaaacaat cacactgaca 55080
atcatcctat gctttctgaa tccatcactc ttctactttt tcagatcttt tctttctccc 55140
tcatccttac catgtgatga actcattttg catgtcaagg gctaaaagtt gaatatttta 55200
aaagttctca ttttcccact actatataaa ccaacaaata tctttagtct gcattcacaa 55260
ataacataac aaatgagctc ttcatatttc tatctgtggt gaattaagat gactagaaat 55320
tttgtggcac catcctgttg aaaacgtggg gacatattct ttctccttga acctgggtgg 55380
gctctttgac tgctttgacc aataaaatac agtgaaagta aaacttccag ttttgatgtc 55440
cagatgttaa aagccttgaa gcttccattt ctacatcttg gaaccaacgt gtgtggggtg 55500
ctgagtcagt atcgaagaat tctgcttatt ctgcttgcat tagtccattt tcatgctgct 55560
gataaagaca tatccaagac cgggtaattt atgaataaaa agagtttcat ggaatcacag 55620
ttccatgtgg atggggaggc ctcacaatca tggcagaagg tgaaaagtat gcattacatg 55680
ggagcagaca agagacaatg agagctgagt gaaaggggaa gccccttgta aagtcatgag 55740
ctctcatgag acttattcac gaccataaga acagtatggg ggagccaccc catcattcaa 55800
ttatctctca ccaggtccct ccacaacaca tgggaattat gggagctaca attcaagatg 55860
agatttggga aaggacacag ccaaaccacc tcattctgcc tctggcacct cccaaatctc 55920
atgtcctcac atttcaaaac caatcatgcc ttcccaatag tccccaaaag tcttaactca 55980
cttcagcatt aactcaaaag ttggcagtcc aaagtctcac ctgagacagg gcaagtctct 56040

tccacatata aacctgtaaa atcaaaagca atttagttat tttctagata agataggagt 56100
acaggcattg ggtaaatgca gccgttccaa atggtaaaat ttacccaaaa caaagggact 56160
aaaggctcca agcaagtccg aaatccagtg ggacagtcaa atcttaaagc tccaaaatga 56220
tctcctttga ctctatgtct cacatccagg tcatactcat gcaagtggtg ggttcccatg 56280
gtctcaggca gctccacccc tgtggttttg caggggagag ccttcctccc ggttgctttc 56340
acaggctggc attgtatgca gcttttccag gcacacagtg caagctgtca gtggatctat 56400
cattccgggg tctggaggac agcagccctc ttctcatagc tccactaggc agtaccctag 56460
tggggactct gtgttggggg cttcaacccc acatttccat tccccactgc cttagcagag 56520
gttctccatg aagacctcac ccctgcagca aacttctgtc tggagatcca ggcatttcca 56580
tacattctct gaaatctagg tggaggttcc catacctcga ttctggactt ccgtgaatcc 56640
acaggctcaa caccacatgg aagctgccaa agcttgaggc ttgcaccctc tgaagccatg 56700
gcctgagctg taccttgacc ccttttagct gtggctggag cagctgggac acagagcacc 56760
aagtccctag gctgtacaca ggcaaacagc agagtggccc tgggcccagc ctatgaaacc 56820
atttttttcct cctaggcctc tgggtgtgtg atggaagggg ctgccacaaa catctctgac 56880
atggcctgaa gacttagcga ttaacatttg gctccttgtt acttatgcaa atttctgcag 56940
ccagcttgaa tttctcctca gaaaatggat ttttcttttc tatcacagtg tcatgcttca 57000
aattttctga acgtttatgc tctgttttcc tgttaaaact gagtgctttt aacacaccca 57060
agtcactctt gaatgctttg ctgcttagaa atttcttctg ccagataccc taactcatct 57120
ccctcaagtt caaagttcca caaatctcta gggcagggac aaaatgctgc cagtctctct 57180
cgatagcaag agacaccttt actgcagttc ccagtgagtt cctcatctcc atctgagacc 57240
atctcagcct ggatttcatt gtgtatatca ttatttgaca ttttagtcaa agccattcaa 57300
caagtctcta ggaagttcca aactttccca cattttcctg tcgttttctg agccctccaa 57360
actgtttcaa cccctgcctg ttacccagtt ccaaagtcgc ttccacattt ttgggttatc 57420
tttacaacag caccccactc taccagtacc aatgtactgt attagtctgt tttcatgctg 57480
ctgataaaga catacctgag actgagtgat ttataaagaa aaagacactt aatggactca 57540
catttccagg tggatgggga ggcctcacaa tcatggtgga aggcaaaagg cacatctcta 57600
catgatggca gacaagacag aatgagagct aagtgaaagg ggaacccccct tataaaatca 57660
tcagctcttg tgagacttat tcaagaccac gagaacagta tgggggaaat actcctgtga 57720
ttcagttatc tcccgttgga tccctcccac aagacacgga aattatggga gctacaattc 57780
aagatgagat ttgggtgggg acacagccaa accatattgc tgctgaatag atcatgtaga 57840

caggctctca aactacacgg agagcaagag aggcccacct taccacaaca tttcatccaa 57900
tccactaata aaacaggcac atcactgaag ccaccttcaa ctctccagac tacccagctg 57960
ccagctgaat accacagatg gctacagtta ataccacacg gagcagaatc atgtagctaa 58020
gccctgcttg cactaataca agtccacaat ttttttaag tttgttgttt taagctgcga 58080
agttttgagg tggtttgtgg tacgtggaat aagatgtcac tctaatataa tataaactta 58140
aactatgtgg cattggcttt ggaatcagac aatggataga agccagaagg atttcacaaa 58200
gactgttagt gaaaagtgaa cagacttcaa ggaaaatgat agcaaaacct gtaaaagcat 58260
tctgggaact gacagtaaac actgaatggt ccttaaggag actgaaaact tgaaagagct 58320
taagaagtct actggaaagg gctttaagga taatgagaaa aaatcatcag tggaggctga 58380
ggaaaacgca ccaaagtcgt attctgatgg gagagttaga aaacgcttgc ctggaatgat 58440
ataaaatata ggaaaaatac cgaaaaagtt tgtggatctg gctggggaga tttttggtgt 58500
caactaaaga aaaaaattaa gcttttaaga aattaaagtt agatttattt aggggtctga 58560
gaacaagaga ctgaggatta cagcctagga gaagtctttc agagaggttc tgtcagactg 58620
ctctggtgaa ggtctttagc ccacagttta tatgcaggct gtacatatac accatggaat 58680
actatgccgc cattaaaaaa tgatatcatg tcttttgctg gaatgtggat ggaccttcta 58740
ttatccttag caaactaatg caggaacaga aaaccaaata cagcatactc tcagttataa 58800
gtgggagcta aatgatgaga actaatgaac acaaagaata aaacagaccc tggggtctac 58860
ttgagggtgg agggtgagaa aaggaagaga agcagaaaag ataactattg ggtactaggt 58920
ttaatacctg ggtgatgaaa taatctgtac aataaccccc tgtgacacca gtttacctat 58980
gtaacaaatg cccctaaact taaaataaaa gttaaaaaaa aagaaaatta aaatctcctt 59040
atcatctacc tggtaatatg aaaaacacaa atctttcatt cattcctttc aactgatgag 59100
gaaaatgagg catcgggagt tagtaaaagt ccacattgag atatgagacc caccactggc 59160
tggacgcagt ggctcacacc tgtaatccca gcactttggg aggccgatgc tggtggaaca 59220
cctaaggtca ggagttcggg accaggctgg ccaacatggt gaaacccccca tctctactaa 59280
aaatacaaaa attagctggg tgtggtggca ggcacctgta ataccagcta ctagggaggc 59340
tgaggcagga gaatcgcttg aacccaggag gtggagttta cagtgagcca aaatcacgcc 59400
attgcactcc agcctgggca acaagagcaa gactctgtcg ggaaaaaaa aaaaaaaaaa 59460
aaaaccacca ccatcatttt gcaagtgtta ccactattgt gtgttaatat tgtagaagta 59520
ttcctaatta tgatttcttt gtattcctaa ttgtaatagc tttgtatttg aaaaattatt 59580

gattcatact ctatgtgtta ttattttgta tgtgatgaca acagaatata ttatcatgct 59640
ccttttgtga atctcattca taatataaag tataaatttg tgattttgct ttaatttgaa 59700
atattaattt caaatatgtt atcacaattt gatacaaact attgacagta aatctgtgga 59760
ttaagtaatg tcttagtagg tattgggaaa atttgaaact agtaacatgg aggactattg 59820
tcattgttta tttcaaagcc agttaaaatt ctgcaaagca gtgtacataa aaataatttc 59880
aagaaattta taaaataccg agattatggt gtataaacaa ctttagattc tttgtttaag 59940
aaattctgcc agtttgtaat atatgcttca ttcaaagtag ctaagggctg tacctggcta 60000
atagtaggca cctaatattt gttgaaaagg aatactgagt agctgggacc tcctgagtag 60060
ctgggaccac acacatttaa cctgtattta taaaattact gtttagagaa taacatttga 60120
tggaatcatg cttttacttt ctgcttatga ctcaattgtt tgtagtgaca ttaacatccc 60180
aaatccttag catggcctac aaggccctga gcaatgtggc acctgctgaa gcctgctgcc 60240
tcatttaata actctttgtc tctttcccag atccagccac tctaacattt tttagctcct 60300
ggaccaagac aagctcttcc cagaacctga cctttgtacc tgttctttat tcctggagta 60360
tttttcccct gacaaattac ttatcatcta tcataattca ggttaaatgg cactaactca 60420
gggaaggctt ccctaactgc ctcccttctc caaccaaatt aggaacaatt atatggccac 60480
acagtatcga atcaagttta taattttaaa ataattggaa gattttgttg tttaacactt 60540
gttttcacta taagactgta attacatgca agtaagaacc atgcctgttt gttcactcct 60600
gccacagtca gagtagtgcc tggaatatgc agtaagggct gaacaaacac taaataaatg 60660
aacaagtgaa taaatggata ttgtctcatt tttagaacag agtactgaat ggatcatgaa 60720
cactatctgg tatgtcacgt aggtaattta caagggctac aatttcagct cagatttacc 60780
ttttcctgga tacaggtctt gataggtctc ttgatgtcat ttcacttcag attcttcttt 60840
agaaaacttg gacaacagca tttgctgtct tgtccaaatt gttactaaga atcaagagag 60900
atatctgaca tgaaatgaca ttggaaaaca ttaaacacga ttgaaataat gctagccaat 60960
atggttatta ttagaaacca attacatttt caacttaaaa acagtaatac ttattgcaga 61020
ctcaaatgtg cttattctaa aacaagtaaa tgtttgccta tggtctgaga ttctaatcca 61080
cggagttcat tctaatccac attcaacact atcatgtacc agtgggcctc ataacccacc 61140
tagccctgtg atttttcagg ttcacttttc taaacttgtg aattaaatat ttattttctt 61200
agttcagaag aggaaaaaaa ctcttgtaat tgttgcccat ttcaggagaa atcttgcata 61260
tgaaaacaag agataaatat acacaactga gggctgtggt ttaaacaaaa tcttgagaat 61320
gttttttgac cttatacatt tgtgctttag tataacaaaa tgatatagac aaaggtaact 61380

tttaatagaa ccagtcacta aattaaaaaa atgacaaatt cttctgctta gctaagcaac 61440
agagaaggta aaatactaat tcaattcatc aatttaagca atactcatta agagccaagt 61500
atgtgcttac tgaataagct gctaaggttt ggtggttaca gagtgtgcgg tgaaatgatg 61560
tctacatcac agtccaacat tcacagagtt taaaagccta ccaagaatca agacagacac 61620
aaatacctaa catagacgtt tgtatatgat aagagagcca gagtacaatt taggagaaga 61680
aattgtatgg aaggaaggtt catttccatt agaccagaaa agacagcaca tttgaaggcc 61740
tgaataagaa atattctgga taagatattg tggctgctac cagaatggct cttgatgatc 61800
tctacctctt ggtatttata cccttatata atctctttcc tatagtgtaa gctggtccca 61860
ggtacttgtt tctattgaat agaatagaac aaaagaaatg agatgccact tctgagatta 61920
gattataaga tactgtgaat ttcttcttgt gccctctccc tctctctctt tctcttgccc 61980
tctcatttga atgaagccaa ctggcatgct gtcagtggcc cagtgtaagt cctgttacaa 62040
gaaattgacg attacctgta gccaacccta agtgaagaac tgaggtcctc agtcctacaa 62100
atggagagaa actgaatcta gctaagaacc atgtgagtga gctgggaaga agatccaccc 62160
tcagttgaaa tttaagatga catattgagc agacatactg agacacactg aaagtaagag 62220
agcaggagga aacaaaacca gggtcataca aagaacacaa ctgattttga gattctcaca 62280
taagtattac accttcagtg agcacgtgta ctagaaattt aaaaaataaa taaaataaac 62340
cttcaaagtg agctagcaaa taaatatccc tatggtctca gctctgagtg gagagagaaa 62400
atgttccctg tggagtttat agccagaatc cagctctcaa acaggtttca gcctgaactc 62460
acacaatctg tgtggcttcc aaatttgcaa gctgagaatt taattcaaag tggtctcagg 62520
ttgatagcag tccaaaatgc taggtaggaa aaaaaatcct ctctggacaa ataaatcatc 62580
aaagcaagct cataagagca ggtttcaaag gtcatgagct tctaacacac acacaaaaat 62640
cacacacaca aaatgggggt agcagcaaca tgggtagcgt attcaaactt gaaaagactt 62700
taaatatttg tattattaga tgtagattat gaaacacata ttttaatgtg gttaattttt 62760
ttaaggaatc aaaactatga gtaaagacca agaaaattgt gctggatggc cacttccacc 62820
atggctcccc tcctatttaa gtctgggtac tgtgtcaccc gaagtcttca ggcacattgt 62880
tccaggtttg ggtttgccta tgaaagaaac tcatgagagc tggaaatgag gagtgaagag 62940
gaggtcttca cataaagcag gcttaaggat tagacatagt aggtttgaca gatgtgatgg 63000
cttgcagaat cctttatgag ctcccactgt ccatctggat aagatttaca gacctttcag 63060
aaattcctat aagcttgggt tctgtgccca cactctagac tgtcaggcta agatctctga 63120

tataaaacag acctcttctg attttgtcta gctgcttttc taatatctat tcaccaagct 63180
cttccaataa tagcataagg ccctaattaa tattaaactt ttatcattat aatacatagg 63240
atgtcttctg ttttcctgat caaattctga ctactattaa aatataaaga attgtccaga 63300
aatatataaa aaaagaatca cacattgatc ttctttaaat gaaaatataa caattgtatg 63360
gactaggatg attacagttg ttcagttctg actgttattt gaagaaaaaa gcaataagaa 63420
gcctcagcaa cttaacagaa ggagctgcca tttactagga gaaaagattg tggatgagag 63480
tgtagcaaag gtcagaattc tgtgaagctt gagatgttta ttataatgaa ttatctttta 63540
tactcactac agtttcctaa caattttggg gtttatattt ttgaaagaga tataccttta 63600
atttcctttc tttgtactat tgttaggtaa ctttaatgtg cagattatac tacagtgaaa 63660
gttgccaatg acaaggcaaa gtcacttaca tcagacccaa agcaaagtgg agccgggtca 63720
tgaaaaaggg gatcttgtgt gtgtgtccac gataagcact atcacaagga ctttctataa 63780
actcacaaga aatttctgcc cacccagcac actctgtttg tccagctcat cctgtaggtg 63840
tctctataat aggacctatc ataaaaaatt cctcaagact gcagcatttc agataagcca 63900
ccctcacaag aacacttgcc tagcaatggc tgtttctgcc agtaagttaa caccagctcc 63960
tgcatcagac cctgtgacca atgatgtttg tttcaaaaca gcttgcatgg acttcttttt 64020
gtctttatat attttcctta cctcaacctc ttgggatgca cctatgattg atcatagcac 64080
aaatatctca gattataatc cttgtttatt tccaaataaa tttatttctt tggagttcca 64140
ctttttctgt tattatacat tgacattgtt attatgaaat tggttgggtg atgtgtctta 64200
ttttcttgtc tccggaagaa tttctgtaac agtgcaatta aacgttcttt gcatgtttgc 64260
tagaactcac ctgtaaaatt gtctgagcaa ccaaagcctg gtttttgtgt ttagtttttc 64320
ttttgtgatt ggggaggggg gtttatcgta ctgattcaag gtgtgaaggt aacatcattt 64380
tgattttata catcttcttc agtccattta agcatgttac atagcgttgt ttgttctttt 64440
catgatattc tttacagtag tctcctaaat gttccctctg cttctgccag gagcccctac 64500
aatcaactca gaagctatag agtttaaaac atgtaacata ttatgccacc tttcttactg 64560
taaaacatcc catggtttct catagtattt atagtaaaag tgaaattttt atgatggctt 64620
gagaaacttt tcccattaga tgcccaagtg ctggtctggt ctgatcttct catcttccct 64680
tgggtgattc tgtggcagtc acactaccct ccttgctgct ccacaaaaac tccagcatga 64740
tcctacttca ggatatttgc cattgttact gcatctgcct ggaacctttt ctcccatata 64800
aacatagaga ttgctcttgc ctgtccttca agtctattct taaatgtccc attctctgtg 64860
aagctttcct gcccacccta tttaaattac agacttcact cccaattccc catctacttt 64920

aagagtcttc atttatcatt ccttgacaaa ctgtaaatat acatgttcac ttttttatcg 64980
tctgtctcca aatactggaa tgttaagttc tgtaatgtca gatatttctg tttggttcac 65040
tggtgtattc ttaaagcatg ttacatacta ggtatactca atgaatattt gttgaataaa 65100
tatcacattg ggcttattcc agaaattcaa gcttgtttca atagttagag caatctacaa 65160
atgtaattca ttacattaac taattaaagg agctaaatca catcaccacc acaataatgc 65220
agaaaaccac atttgataca actcaatatt catgtctgcc taacaaacat ctcatgatac 65280
taggaaaaga ggaagggata tattattttc atgtataaag cactaaccat tgtagcatgc 65340
caatatactc aaaattcaat gaaattccta tcaaaatctt agcattcctc ttagtcctca 65400
acaaagcatt tctaaaatgt gtatagaaga ccaaagggcc aaaagagtca acttctgaag 65460
aagcgcaaaa agaaagttga ggaaatctta aaacatgtta ttgagcttaa agttgcaaaa 65520
ataaactcat gtaccataac tgatgagtag aaaaatagac tagtggaata acataaaaat 65580
aaaaacaatg cttacataaa atgttgtaac tgatttggat gtcattagaa atcagtaagt 65640
aaatagatgg acaatgtaat gaaagatgct aggcaaataa tgtggtaggg agaataatgg 65700
ccctcaaaga tgcccatgcc taaccctgga acctgtgaat atgttacacc gaatgcaata 65760
aaggcttatc agatgtgatt aaggatgcaa actgagatgg agagatcttc ctgggttacc 65820
cagatgggcc cagtctaatc acatgagttc ttaaaaatgg agaacctttc ttagctgagt 65880
ccagagagag atgtgacaat gaaagaatgg tcagagaaat gtgacattgc cagctttaaa 65940
aagagagagg agaggcaatg agaaaaggaa tgctgatgtt ctctagaaga tagaaaaggc 66000
caggatatgg attctaccct agccgccata aagaaacatg cctgtcgaca acttgatttt 66060
agttcactaa aattcatgcc tgatttctga cttgtgtaca ctgtaagatg acaagtttgt 66120
gttattttag gtcacttagt ttgtagaaat ttgttacagc agtaatagaa caagtggtta 66180
tccatatgag gcaaattaga ttggatacct atctccaata gaaatcaatt caaggtgaat 66240
tccaggaaaa tacttaaaac atttagatta aaaataaatg agaatttttg ttactttttg 66300
taggtcatag aaccaagaaa aacaaacatt aaggaggaaa aatgaacata tgactacatc 66360
aaaatataaa gcttctctat ttggatgata tcataaggtg acaaatcata aactgtaata 66420
tttacaacat atatatgagt gaataaatat acatttagaa tatatatgaa ctcccaaaaa 66480
tcaacaggaa aaataagaca cagaacaagc aaaatgcata aacgaaagaa gtcaaaagaa 66540
aaataatgac tcataattat atgaaaagaa gctcatcttc atagatgagc agataaatgc 66600
aaattaaaac caccctgaga tgctttttac atccatgagc ctgataaaag ttagagtcta 66660

aaagtaataa ttaacaaaga tgggaagtaa cagaaaatct tgtccattac tggttaaagt 66720
ataaactgat acagctactt tatagaatat tacattatag aataaagttg taagtatgta 66780
tatgcagtga ctcagcatat tcattgctag tatgtactca agagaaactt acaggagtgg 66840
actaggaagt aaatacaaaa tgattacaac attgtttgtt atatcaaaaa ataaaaaaga 66900
cacccaattt tccagcaaaa aaaataagta aaaataaatc ctggtgtatt ctaacaatgg 66960
aataatatat agccattaaa ataaatcaac tattactgta catatgaatg taagtatcag 67020
caaaacatat tgtttagtga aaaactaaga agctgaagaa gaatatatac aatatggtta 67080
catttatatg aagtccaaaa acttgcaaaa taaagaaatg tgtttagaaa tagattcaca 67140
tgtgagaaaa ctagaagaaa attaatgaaa ggataagagg gatagcagta attctgagta 67200
gttgagggaa tttcaattgg aaaaaaataa tatcatattc tttaagtcag gtagtgggta 67260
ttagcatttg ttttaccatc gttctttatt cttatagcta cactatatat tttcaatgta 67320
tttaatgtat tttttgcata attaaatatt atgcaataaa aatgagaaaa caaaaaagta 67380
gaaaatgata aattacaata aagaaatgga gaaaaaatta taatctagtt gagtaatggt 67440
atattacata gctattttct taagtagatg tatgtacatg atgtatgcac gattgtacat 67500
acatgttctt aattatatat aaatatatat gtacatattt ttaatataaa atactaaaca 67560
aagtacacca aaatattagc tcctatgtta gtgagataat gttttgtttt tttgtatttt 67620
aagttttaca tagtaggtgt atttttctgt tttcatactg ctataaagaa ctgcccaaga 67680
ctgggtaatt tataaaggaa agaagtttaa ttggctcaca gttcagcaca gcttgggagg 67740
cctcaggaaa tctacaatca tggcggaaga caaagaggaa gcaagccagc ttcttcgcaa 67800
ggcagcatga agaagtgccg agcaaagggg aaagaatccc ttataaaacc atcaaatctc 67860
gtgagaactc actatcacaa gaacagcaca cgggaaactg cccccatgat tcaattacct 67920
ccacctggtc tctcccttga cctgtgggga ttatgggggc tatggggatt acaattcaag 67980
atgagattca ggtggggata caaagcctaa ccatatcagt aggcatgtat tgaattttaa 68040
actcagagaa aaatactagt gtttttatag gattcttact aaataaaaac cagaaagtag 68100
taaaccatct acgctaagac ataaaattca gttgtttagt tacaagatag aatgtggcct 68160
tgtaagaaag caaattaact tctaacatac aaagccttag agaagattca agtgactgac 68220
ggatcttaaa cagagctatt attacaactt gaactgcagt aaaatatcct cagcaacata 68280
gattgtgtgt ttcactagtc agagcaatac aaatttaatg aaactccatt ggtggtgttt 68340
ttaatcagac aatttctgaa gatgtcctgg cttattcaca gatgcaagcc aaatctctag 68400
aagagtacca taataagaaa aaaaagaata caggcaattg agagctgttc caaagtttag 68460

ggagtttttg taaggaatta ataaataaaa atgttcttga aagagagaaa ttaatatgca 68520
gttcatactg ccagaattgc aggcaattta tcaaagtccc ctaatcctcc aaaatcgcta 68580
tttttttttt gacacacact ttacagtaca gaagaaaatg tctccggcaa tgaatcacaa 68640
agttaaaatt acctagtcta caattaacta gacagtgatg gtaaatcatt ttctaccaaa 68700
agaaagaaat gtcttgtcta ttcaggttct gctctactta aaagttttcc ttgttggcga 68760
gcaagtggtt agaaaatcat attttatacc tacattcagc ttaactatca ttcagctcag 68820
gaagatgact cagggcctta tccatacctt caagtttgct cttagcaagt aattgtttca 68880
gtatctatat caaaaatggc ttaagcctgc aacatgtttc tgaatgatta acaaggtgat 68940
agtcagttct tcattgaatc ctggatgctt tattttctt aacaagagga attcatatgg 69000
atcagctaga aaaaaattaa gaggaaaatc acatggaaag ttatatatta tatatctatt 69060
atatatatta tatatctatt atatattata tattgtatat ctattacata tataatatta 69120
tatatgtatt atatatatta tatattatat atctattata tatataatat tatatattat 69180
atatcatttc caaattcccc agcgttcata tttgtcagtg caagtaaaga gccttactgc 69240
tgatgaggtt tgaggtatga ccatttggcc agaatttatg aactctacat gtcgcttgat 69300
gtgtgcttca gggtacactt tttttttttt ttttgagacg gagtcttgct ctgtcgccca 69360
ggctggagtg cagcggtgcg atctcagctc accgcaagct ccgtctccct ggttcacgcc 69420
attctcctgc ctgagcctcc tgaatagctg ggactacagg cgcccgccac tatgccctgc 69480
taatttttttg tatttttagt acagacgggg tttcaccgtg ttagccagga tggtctcgat 69540
ctcctgacct cgtgatccac ccgcctcggc ctcccaaagt gctggaatta caggtgtgag 69600
ccaccacgcc cggccagggt acacttttaa gcagagacac tactttgaag gtcataaaaa 69660
atataataag agataaggct aatttgcttt aataataata aaatccttta ataaaaatat 69720
aaaggaataa tataataatt ttctttaata aaatataata agagataagg ctaatttcct 69780
ttaataaaat atagtaacta cataccaaca gaattccaaa aaaagaaatg gagaggaagg 69840
gagcatgggt cattaatctt gtcaaaaata taaaattata tacgaggaat tcctagaaac 69900
tgttttcctt gtctgcggcc attgtgctgc tgctacacaa ctactgcaag cagcccttca 69960
agccctcctc ccagtacaaa gctaattgac ttgtgagaaa tgttaagctt ggaagagtca 70020
gcatcgctgc acttattttt tattctactc tgacattaga ataatccttg agtgggggaa 70080
aggttaaaaa cccccctgga taagtgttac taattaatga tgattgtttt aaacaatgtt 70140
tggataattt ttccttgtcc cttgacataa acttgataaa taactgagaa gtgagaagga 70200

gattagtggg ttgattaaat tccattcagg tacttaaagt tagctccaaa aatttagcta 70260
tttataaatt gtcatgcatt gttaatgtat aagagatgta gatttcattt atctttggtg 70320
gagcgagatg aagcagtgaa tcattgaaga ctgaaagaaa gaaaaaggtc ttttcccttt 70380
tctttaagaa gcatcattag ttaaaaacat gttagttgat accagagaac tatatttaaa 70440
gggacagcaa taagcaaatt gattactctg gtgattattg gagtgacatt gccttttagt 70500
tgtactttca caaaattcac aatatttgcc aaagtcaagt tatccattac actattaatt 70560
tgtcattctt ttgtttatat agtcaatatc tctatctcaa ttggatctat ctcaactgct 70620
tctaaacaag ccaccacagt ctctcccatt tcaacaatct cttccaagta ccatttcatt 70680
tcttcttttc atatttttga aaacttttga aaaactacct attttcctcc tccatttctt 70740
gttcattcca ttctagtgga catggaatct gttcctcctc caaaacggaa tttggtaacc 70800
cttaaattac taaacccaaa acaatatgtt gtctttatct ttacctctct gtggcattta 70860
atgataagac cactactttc ttctctttta cccttctttc ttgaattcag tcaaacaacg 70920
tacttacatt tttcgtctta ttctccatct tagaaaccac ctcagctttc tccattcagc 70980
tataaaattg tgcttttcct caaagattaa tctgcctctc ctctcactct atactatctc 71040
tgttagctaa ttttatttgt gcacattgct tatactgggc attatataca catatgcatg 71100
tgtgtacatg tgcacacaca cagtgtatgt ggacatgtat atatatgtgt gtgtgtgtat 71160
atatacagca tatatataaa ttacaataac ataaaggtgg cattttaaat tagtggaaat 71220
taccctgatt tgatcactac acattctata catgtaaaga aaatatcact ctgtatccca 71280
agaatatgta caattatggt ttgtcaaatg aaaaagttca tacattgaaa aattttagat 71340
aaatatcaaa ctttctctga aactgtaact gtaaaatgta aaaaacagta attgctatat 71400
tgcttatttc tgagtagaag aatatgagac atttccctaa tcattatgtg taattacaat 71460
tacatatata tatgtaattg taattacaca taatggttag ggaaatgtct catattctat 71520
atatatagac agaaagagag aaaatatatg agggagagaa ggaatctttc catctccttt 71580
gagttccacg gtgttgagag tcaggacaac tgcaattgct tcatcatgcc tgcttgcaat 71640
tatagggctt ttgaaccatt tgttccctcc ttagatatcc tcattttttt cagattcttg 71700
cttagaagtc actcctccat ggacctcctc tgacatatta aacattgcag tccattataa 71760
gctgcaagag gacagggatt tttgcctgtt ttattcccta ctgtatcacc aggggctaca 71820
gcaatatctg acaaacagtg ggcatgtaat gaatatttgt taagtgaagt aataaattca 71880
atcaaatcac atcacctgtt taaagcactt cattggcttc acattgcact tagaataaag 71940
agaaattctt tttatacaat atacaatata ttttatacaa tataagttcc tgcagaatgc 72000

agacactttc tacttctcca gcctcttttt gactcctctc ctactagctt ctgtatttaa 72060
gccacattag acctttcttc agttttttat atagactttg tcgcatcaca cctcagagat 72120
tctgtacatg ttcttcctcc tgcctagaaa ggatcgtccc tccactttcg ccaactaatc 72180
cctgctcaac ttttcatctc agcaggaagc ccattctctt tggcaatcct ctggcctcca 72240
gcccatttat tatatgctca catgtcaaca tgtacttcgt acagcatgta acacaattgc 72300
acttttatat tttaacaaat tatatttccc atattgaact gtaagtctcc tgaaagcagg 72360
aattttgttc ttgctcatca tcaacttttt caacatccag tgcaccattt agaacttaga 72420
tgtagtcaat acaggtttgt ggaatgaaag aggaaaagaa agaattaata ttcctttaaa 72480
ttaggatggc aaagatcgta tatagaaaat tggctaagtt gtggtccatt catgtttgct 72540
cccaattaag gagcacagct atgaaaagga aggcttcaaa ttaataacca atagattttt 72600
ttaaaaagaa aactggccag gtactgtggc ttatgtctgt aatatcagca tgttgggagg 72660
ccaaggcagg attacttgag cccagaaatt ccagaccagc ctgagaattt ggcaaaactc 72720
tgtctctaca aaaaatacaa aaattagcca agtttggtgg catgtgcctg tagtaccagc 72780
tacttgggag gctgaggtgg aagaatagct tgagtctggg aggtcaaggc tgcaatgagc 72840
tgtgattgca ccactgcact caagcctggg tggtagagta agaccctgtc tcaaaaaaaa 72900
aaaaaaaaag aaaaatcact aagcaaaata agacatgtga aggatcatgt caaaggtaag 72960
aaaaattagg ggaacattaa aagctttctt cccaagccac taaatcaact tgactaacaa 73020
aattaccact tgatttagta ttagaaaatt acattacata tcaaacataa acccattaat 73080
caaatactaa agaaatttct gagttaaatg gtataatgtt agcttatgcc agagctgacc 73140
ttgaaagatt gttcaaatat ggctcagtgt gattgaaagt tctgtgtgaa tatgtttttg 73200
gaaagatcca acagcaacac cttagtgtat gtttttgaaa taaaatgtat ctgagtagca 73260
gcaaagttat tctcaaattt ccattttata gctggagatg ttataccgtg acgtatatga 73320
taggacccaa tatggatcaa tccctttag aagtcaatca ggaagagggg agcagttaaa 73380
acagttgctt ggtttacaaa cattagaaca attttcttat tcacaccatc tgattattgt 73440
attttatttt ttccccaacg tttagactac acaatgagtt aagaatgata aaaataaggt 73500
caccaatata ttatgtacat atttaccaaa atctgtgcat gcttatacat ataaacacag 73560
ctgataattt attacttagg ctcatttgta atttttgtca ctatagacca gtttttttatt 73620
taaattgatg attagtatac attttaaatg attagtcaaa ataaaaaatc taaaatgtgc 73680
tctaaatacc tcttaggtca gaaaaaaaaa gtcaaaagct agagtataga gaaattaaga 73740

aacgccctaa atttctaatc tgacaaaaat tcatacaaga tttaaatatt ttaatggaaa 73800
atagaacaga actaattatt gaagaaatta tagaaaggaa acaaaataaa cagattatat 73860
ggaggatttt tagaagataa gtaaataaat taatatacta ggaaaaaaca agggaaatat 73920
aattgataaa taaatacagg taagagttct tttgaaataa cgataaaata gaaaatctct 73980
gtcaaaacta aaaggaaaga tgcataaata tataaataaa tgataaaaaa tgttgcatac 74040
atatatgact ttttcagaat caaaaaattt aaatttctgt aataaaattt aaatgtttat 74100
aaatttaaaa aactagaaga aagaatgttg actgttcaca atacaaataa atgacaaata 74160
tttgaggtga tggatatgct aattatcctt atttgatcat tgggcattgt atacatgtat 74220
caaaatatca ctctgtatcc catgaatatg tacaattatt tgtctcaaaa acaaacaaaa 74280
aaaagataat gggagaatgt tgaaaactca gagagaagag caactctcac agatagggat 74340
ccagataaca ttagcagctg atttctcggc agaaaccttg aaggccagta ggcagtggat 74400
tatatattta aaataatgaa gaaacctgtc aattgagaaa tatatagctg gaaaacttat 74460
ccttcaaaaa tgaaggagaa attaagacat ttccggattt ttttttaaaa ctgaaaaaaa 74520
tccatttatc cctgaatttg ccattcagga agtgttaagt ccttcaggtt gaaataaatg 74580
aactctaggc aataactata taagtaaata agcaagctgt atgaatatac aaagctctct 74640
ggtaaaggta aatacataaa caaacataaa aacagtccta ttgtaatttt ggtttgtaac 74700
tctgcttttt attttctaca taatttaaaa ggcaaatgca taaaatgtaa ttgtaaatct 74760
gttagctggt atacaatgaa taaagatata atttgtcaca tcaataacat aaaaagagta 74820
gagctatata tatagcagta gaattttggt atgtgattga acttaagttg aaataaattc 74880
aaattaaaat gttataactc taggatgtta tatgtaattc tcatagtaac caaaaatgaa 74940
atatacatag aatataaaca aaaggaaatg agactagaaa caaaatgtgt cactacaaaa 75000
aaatcaacta aagataaaaa agaaataatt gagaaaatga ttggcaaaaa tcagtaactc 75060
tgacgtatta aaactttcca tgctacataa atctgaaaac tctatttcac ataaaactgg 75120
agctgaaaga aacaaatatt tacctataaa gttaaaagtt atatagggaa caaacactaa 75180
tttttttag aaaaaattat aaaaagagta aaaatatgcc ttatactacc gtaatttcat 75240
gttttacagc tctgggaaaa tagcaaataa aatgttctgt tagcatgaat ccctctgtgc 75300
ccccaaaaaa ccctatggat tgcatcatta ttacctaaaa agtctattct caaatgcagc 75360
agagtgatat tttttacaag gtagatatta attttagata tggaataata ttggtgattt 75420
caattttata acactgggtt aagatgaaag aatgagaaga taaaggtccc tcagcaatat 75480
aactcacaaa catgttcaga agcagtaaga agttacatta attatctttt gaaagtcgat 75540

aatctacatc tttaatgtat gcatatagca tagctaatgt actatccctg ggtccattta 75600
ttcaatgaat aattgccact atgtgtcaga catttttcta ggcctaggaa tggatacata 75660
agtgaacaaa gcaaagattc tggttcttgt agagtttcca ttaaaagaca atttagtaaa 75720
acttttcttc ccccaaatta taaaatctgt aagatgattt aacaacatgt gtaaaagtca 75780
ttgtgggcca ggcacggtgg ctcataccag gtgtggtgac tcatagcact ctgtcaccca 75840
ggctggagtg cagtggcaca atctctgctc actgcaacct ctgcctcctg ggtacaagcg 75900
attctcctgc ctcagctttc tgagtagcaa ggactacagg tgcacaccat cacgcctggc 75960
taatttttgt actattagta cagacggagt ttcaccatgt cggccaggct ggtctcaaac 76020
tcctgacctc aaatgatccg cccacctcgg cctcccaaag tgctggaatt acagatgtga 76080
gccacaatgc ccggccttat tttctacaac tttggtaact ttagcatata ccccaaatct 76140
gtaagacata atattataat tcaaatgcaa ctcatggctt ctctttgtac tctttctcta 76200
gcttttgaat tatttattct aataccagtt ttaattctga cacaaaatca tgggagttct 76260
aatcaaaatc caacctttta tcataaaaac tatgaagaaa ttatgagtag aatttaaaaa 76320
ggaaaatagg cctattaatt agatttgtct ttgtagcatt taactctata ataaataata 76380
ttttatgcct atgagtcccc aacaaagcct ccagcttcta tttagatata aactgtaaaa 76440
gtcactactg gatccacaag caagactatg gtaaataaat ttctccacct aaccagcttc 76500
ttttacatga tgttacatgt ttcttttgtt ttttcatttt ggcaaatatt gattgtcatc 76560
ttcgtgtttg tctgtgtcct aagtgctggg atacagaatc tgaaaagatg gacacaggac 76620
ctgccttcaa gttcaccccc tttttttttt ttttttgaga tgcagttttg ctcttgtcac 76680
ccaggctgga gtgtaatggt gagatctctg ctcactgcaa cctccacctc cagggttcaa 76740
gtgattctcc tgcctcagcc tcccaagtag ctgggattac aggtcccagc caccacgcct 76800
agctaatttt tgtattttta gtagagacag cgtttcatca tgttggtcag gctggtctcg 76860
aactcctaac ctcaggtagt cgacccacct cggcctccca cagtgctgag attacaggca 76920
tgagccacca cgccctgcta ggagttcacg ctttagttgg ggaaaatata caataagcaa 76980
gccagttttt aaaatgagaa ctgcaattag agttaaatgc tacaaagaca aactcacagg 77040
aagacgggat gtagaatgat aaggctctca gaatagtaag agaaactatt gcttcttacg 77100
atgtttgtct ttctttgtat cggtgctcag ctgagtctgc agtgcttcag aggcagcttt 77160
cattttataa aaatctatga tttctccttc cagttgtttt ttctcttcct cgagcttcct 77220
tatctcctcc tgttgaatca ttttaagatg ctcgaacttg tcctgcagct gtgaaaccaa 77280

tgtgcagttg tgacaccaaa gcagtgtggc tgaacaccta aaagaatacg cttttttttct 77340
gattatcaaa caaacccaaa tcatcacagt agagcacgat cttaataaca atctcaaaaa 77400
ctcaggagta aacactcaga tatggaattt ttcttttctt tctttttttcc ttttataaga 77460
tggagtctca ctctgttgcc caggctggag tgcactggtg cgatctcagc tcactgcaac 77520
ctccatctcc cagttcaagt gattctcctg cctcagcctc ttgagtagct gggactatag 77580
gcatgcacca ccactacagg cgtgtgccac cacacctggc taatttttgt atttttagta 77640
gagatggggt tttgccatga tggccaggct ggtctcgaac tcctgacctc aggtgatcca 77700
ctgaccttgg cctcccaaag tgctgggatt acaggtgtga gccaccatgc ctagccaaga 77760
aaccccttatt ttaaaacaag ccaggcgcgg tggctcatgc ctataatccc agcactttgg 77820
gaagccaagg cgggtggatc acttgatgtc agtagtttga gaccagcctg ggcaacatgt 77880
tgtaacccca tctctactaa aaatatattt taaaaattag ctgggcatgg tggtgggcac 77940
ctgtaatccc agcttctcag gaggctgagg caggagaacc acttgaacct gggaggtgga 78000
ggttgcagtg agcggagatc acgccactgc actctagcct gggtgacaat agaaagactc 78060
catctcaaaa acaaaacaaa acaaaacaaa acaaaaaacc acaaaaaaaa agactccatt 78120
tcaaaaacaa aactaaaacc aaaaacacaa cacaaatgta gtacacaaat gaaaataatt 78180
agtgtgttaa atacagtttc atagaaaata aaagaccaat caaatacaat aagctgcctt 78240
tttagatggg tatgttattc ttctttcaca gctaaagaaa caggctcaga gaatgttact 78300
tgattggacc gtgttgcatt tctggacagt gcagttgaga tcagactttg tgtgtaactc 78360
cactagccta ccagggtgcc tctcataaag gtaagaaatg taaatctggc ctaatataca 78420
aagttgccag ggcagcactg ggtcaattct acatacagta ctcctatgtt catcaaggga 78480
aaccttaagg gaaaatgaaa atgtttctag aaggcgactg gacaccagcg cctttgcttg 78540
ttgcctttgg gctcttcttc taaggccaac agtgatctga aattattgac tggcttttcc 78600
aatcaagtgg acaaaatggt accaaggtcg ccaacatcga tgtagaacat tgatgttcta 78660
caacattgct taacgcaagg ggagacgctc ctgactcaga gtgtttaatt gctcacctac 78720
ttctttttct gccctcttgg gcttctgaaa tgaaaagaac cctggggtga tacagtgagt 78780
caaaggggtg ccagccgcat cacagcaaaa tagattccta aaaaatccct ggcctaagat 78840
gacagccttg cctggatcag tttgaatgtg ctgatagtgg acatggtaga atgaaggtgg 78900
ttgaaatgtt catattaaag aacttccacc cagattgcaa gaaaagagag aggaatggag 78960
atggcagcac gagcccctac aataaaagca gatgttttga gatcagttat atttcttctg 79020
acaaaaatta aagatagaaa ccaaagttta gcctgagact acaattaact gggcaataag 79080

ccagaggcac atatggcata gacagattta aacatttctc cctgatatta atacaaacac 79140
taaaattaca aatgcatgga ttccaaataa aacaaatatt taaaaaattt aatgaataaa 79200
aactggggtc tacagtagta tttgaaggag atctcacaaa caggtttggt ttttgaaggt 79260
tagaactggt ggtttagaga attcatttca ttccagagaa agaaagagag gaatttcttg 79320
ggttccttca ggaatgcatc tagctttgcc tcatctttgt ttgaactatg gatacggcag 79380
aagaaaacag gaggatttca cagatttaag gtacaaaaag tcactgggtt ctctaagaag 79440
tctgggattc ttctgctgga aaaataagtt tgttgagaaa aaatgagttg gaggaagctg 79500
ttattgaagt gaagcagaat tgtttttact aatctgctta ttacccactc tgtagtgtgg 79560
aaacaaatta ttcatgcaca aggtcctctt actgttccta gaatgcagtg gaaagagaac 79620
agattagttt tcctccctca gaacacaatc cctagaaaca acctacctca gatgagatat 79680
tgcctaatta ttttcaaaag acagtgaaac atcatggatg taaatgtttg ctgcaaaata 79740
aatacatgct agaaacagaa gcatctgggt cacagctata ttagagctac ctgtgttccc 79800
ctgtcactga cattaaaaca aaaatgtcca atacaatcat tcacagcgtg ggagagggga 79860
agttgaagga tggaaaggcc aggcataaaa ggatttcaga atttccgtcc ataaggaagt 79920
ggctttgtgc actgtctgtt actgtgtgca aggtgaaatt tgaagaatga aaacgtgcag 79980
taacaagggc tcctttgtcc aactcacctc tccagatacc aagtttcaga catgttgcat 80040
tttaattgaa aggttgatat aattttttt aaagaacact tgcggtgttt gaagtgacaa 80100
aggctgctgt gacaaaaaag cagggaaagg gaattttttt ttaaaagcaa acaacaacaa 80160
caaaaacccc acagaaaagc aaacaacaaa caaacaaaaa acagaggaag aagtcaaaca 80220
ccctgggctg tgactacttc caggaagggg ctacaagagg cagttggaaa ttctatttgt 80280
tttgcaactg tgggttttct ggcccgcttc ctttctaaag tatattactc tgcttttggt 80340
tcatgaagtt atccatttct gttttctgga acagctatgt attttcttta tctatcatct 80400
atctatctat ttaccatcta tcttttctac ctttcgctat caagagcttg ggtcaagcag 80460
gatagaattc cagtgtatgt tcactctacc atttaaaaca agagctcttg taggcattct 80520
ccatcacatc ataaacctga gctttctaaa acagggtgtg gcaaactacc atgcatggac 80580
catgtctgac acagtctgcg tttgtaagta aagttgtaat aggacacagc caatacatgt 80640
gttacataat gtctctggct actttcatgg tataatggaa gagctgagtc attgagagag 80700
agaccatatg gcttggaaaa cttaaaatat ttaacattta gcctcctgca gaaaatactt 80760
gctgactctt gtttgaaaag atctctgttt agaatgctac ctattgcgtt ctggatagaa 80820

tcacaactct ttaccacaat cgacacagct tcagccctgc ttctatatcc agcctcatct 80880
atttctgctc ctcctcctta ttttccttct ggccatgctg atggattgtc agcttcccag 80940
atgtgtgaga atctctcctc ccttcctaac attctcatgc tctccctctg cctctcaaga 81000
acttcctgcc ccatctctca tgacaaatcc tttctacatt ctttaagatg cagccctttt 81060
gctccttcct taaggatgtc ttgtctggct ctattttggg tgacgtgctc cttctgcatc 81120
tcccagagcc agcctgtgtg tgtcagctac aacatttctt tgcatctctg tgtcatatat 81180
taccaaatct gcctaagctt gcatgagtca ctgcatgaca acttcagact ccaccagcat 81240
tgtccccact aaccacaagg cttagacatt cgtccagtat gctcggggtt gtggggtggt 81300
agcagtaacc agctggtgac catcatttct tacatcagaa tcaaatctgt agatctctgc 81360
cattcataag tatttggagt ttaaaattag cataaagatt ttccttaaaa taagaagaaa 81420
tgccttgagt aggcttttgg aacataggat gtttccactg gttcatttct gtgttcaata 81480
ttcccacatg aatctaaaca cgactctgct cttagtagct atgtgaccct gggaaagtca 81540
ctcaatctcc ctcagctaaa ttttgttgtg tgagtaatga ggagacagtt gtgatttgta 81600
tttagtgaat aataacaaac aaaaggcatt tagctttctg gaacctggta tgtagtagaa 81660
cctcatgaaa tactagctct gttgataaaa ctagactgaa agaagctttc aaagtcaaca 81720
acagtttgag gcagtgaagg acgtagagga gaagctgctg ctgcaggggc ctgtagctcc 81780
tggaagcccg ttttgtccat gatttagcag gaatgcatta cccttccatg acgaggcaca 81840
gcccacagaa accaaggcca ttctttgaag aaaaacatgt cttaatagcg tttacattat 81900
gtaacagtgt aatacaaata ataatttatt attagtaata atgtgaaatt atttacagta 81960
ccgtaaccct aactctcacc cctaatccta accctaaccc taacccctaa ccctaatcct 82020
aacccaaacc ctaaccctaa cccaacccta accataaccc aaccctaacc ctaaccctag 82080
cccctaaccc aaccctaacc caaacctaac cctagcccct aaacctaaac ctaactccta 82140
acccctaact cctaacccta accctaaccc taacccctaa ccctaacccc taacccctat 82200
ccctaacccc taacccctaa ccccaacccc aaccctaaac ccaaccccaa ccccaacccg 82260
accctgaccc tgaccccgac ccctaaccct aaaccctaac ccctaaccct aaccctaccc 82320
ctagcccaaa cccgaacccg aaccctcacc ctaaccctaa accacatgag caatgtgggt 82380
attatatttt gggtgtcatg tgtgcattag gaatgctgca tttgtgttcc gacactgcag 82440
ttggcccctg caatgcagcc cctcgccttg acttgggaga atctcggtgc gcaggattca 82500
gaggggcttt tggtttcccg ttttccacac tgaaccgttc taactggtct ctgaccttga 82560
ttattaacgg ctgcaaccgg gaaagatttt attcaccgtc gatgcggccc cgagttgtcc 82620

caaagccagg cagtgccccc aacgtctgtg cttaggagaa tgctgctcca cctttacggt 82680
gtcccccagg tctgtgctaa gcagaacgca gctccgccct cgcggtgccc tcagcccgcc 82740
cgcccgggtc tgacctgagg agaactctgc tccgccttcg cagtaccact gaaatctgtg 82800
cagatgagaa cgcagctccg ccctcgcgat gctctccgcg tctgtgctga ggagaaccca 82860
actccgctct cgcaaaggca cggcgcgccg gcgccggcgc agagaggagc ggcgcgccgg 82920
cgcaggagct gttcgggaga cgcggcgcag ggcatagacg cacgcctccg cgtccccgga 82980
ggggaggggt cgctgggcgg gcgggagtga ggcgcggcgc aggcgcaggc gcagagacgc 83040
acgtcgctgg gctcagggtg gcggggcgtg ttgcaggtgt acagttgcac gccgccgggc 83100
ggggagcgcg ggaatggcga ggtgcaggcg cagagacaca cgtccccggc ggcgcagcgc 83160
acagacgggt ggaacctgag taatctgaaa agcccggttc gggtgtcccc tgcttgtacc 83220
cgggcactac aggacctgct tgcccacggt gctgtgccat tgcgccccct gctggcgact 83280
agggcaactt cagggccctc ttccttacag tggtgtccag cgcctcttgc tggcgacggg 83340
gcacggcagg gctctcttgc tcgcagtata ctggcggcac gccgcctgct ggcagctagg 83400
gacattgcag ggccctcttg ctcacattgt agtggcagca cacccgcctg ctggcagctg 83460
gggacactgc cgggccctct tgctccaagt gtagtggcgg ctgctcccct gctggcagct 83520
ggggacactg ccgggccctc ttgcttgcag tgtagtcggg gcacgccctc ttctgtccgc 83580
tgggggcact acaggatcct cttgctcagt gtagtggcag cacgcccccct gctggcaacc 83640
agggcactgc acggtcctct tgctcatggt gtggtgcccc tacgccacct cctggcagct 83700
aaggacactg cagggccctc ttgctcacag tgtagtcgtt gttcgccccc tgctggcagc 83760
tagggacact gccgggccct cttgctgaca ctgtcgtggc tgcacgccac atgcaggcag 83820
atggggacta agcagggccc tcttgctccc ggtgtgacgg ctggcgtccc ctactggccg 83880
cctcctgcac cacttaaagt cagagcgcca gttattaatc cccatcagtt ctgtaaatta 83940
aaactgaaaa ggagctatta ctggggagag ctgatgtccc agttattaac ttggaagaaa 84000
gattttcacc aagaggcagt acaaagatgg aagataactt cattgaaaag aaatacagtg 84060
taaagagctt attgtaggaa aatagggagg agtgggttca tagtgcatga aaacagccta 84120
agagtcctgt gcagggaatt ttattttgga cttcttcaca ttcctgcctc tgtctcaagt 84180
ctatgcttat tttccttggt tttcctgcta ctgccttagg tccctgactt gccccactta 84240
ggcttgtggg acctcctgtt gattgaggta cacgtggggt gatgaatctg aatccactct 84300
ggcaccaacc tccttcccgc catcccaggc aggctgacag cagtcacgtt tgtatctact 84360

gcacctgcct cttttgaatg tctttctctg ccctaatctg tacttatggt gccaggtttc 84420
tcttaggaat gtcccctttg tccttcttat cagcatgtag ctagcaatat tctgacattt 84480
ttattgcagt gaatgatgat tggggcatct taagagaagt tctagggtgt ttctgtgtag 84540
gtacctcttc tccctcctaa ccacaattga caagtgccca tccactccag cactggagat 84600
gctactaata tgtgcatttt tggtggtccc tccaggtgag ccttcacaga ctttcccttt 84660
tccaggagct ccccctcctg ttcatgtcta gctagctatc tactctaaca gagcccacta 84720
tcctgtgtct ttcccaaaaa tagtgaggga atgattaatt ggaaaccata agaaatcata 84780
tgcatgtaga tgaaaacttt acaacttaca caaataacca ctcaaaatca tccttacact 84840
aaaaatgcaa aactatacaa tttctagaag aaactataga agaaaagcta tgtgcctttg 84900
cgtttggtga tgaattttaa caaatgacac agaaggttga tatacacaga agaaatgaca 84960
atgtggattt cttaatattt acagtttata ctctggaaga gaccttgtta agagaaccaa 85020
aagacaagcc acatattgaa gaaaatattt gcaaaataca gatctgagaa tttgtattca 85080
aaatacataa aaaattgtta aaactaaaca ataagttaaa cagcccaatt aaaaatgcac 85140
acagatctga acagacgcct caccaaagaa gatctacaga tggcaagtac acttacaaaa 85200
agatgctcaa catactagag aactgaaaac cacaaaaaga tagcacagct ggtctatatc 85260
tcttagaact gctaaactct ttaacaaatg acaaattgct ggaggaaaaa caagaactct 85320
tttcattgcc ggtggaacac agtgtataag accaaaatat gccaccccaa aatataatgg 85380
taggaaacca gaatatgcaa ccccaaaata tgtccctttg gcttaagaat tattccaagc 85440
taattatttt gaaaaaaaaa aatgctaaca aaggaagttg tgaaaacaga gaagttacac 85500
ttgtgtaagg aaaatttaca tctataaagg aaatcaccat ttaaaagcta cctctctcga 85560
caccaagaag agaaggataa ctaaatcact aaagagtctt atcaatggag aatgcatgga 85620
cttaagtctg tataatgaac cttacccttg tctaatgtgc ttttgctggt taactcccca 85680
atactgcacc tcaaatcttc tttctttaag ttgaagacag tatttatgct tgaattgaaa 85740
gccacctgtt ggagatttac tcatttttcc ctgaatatct cccatgtaac cataaggtat 85800
acgtgttttt caacttttct gtttttctca ttttaatctg tcagttttta cagagcatcc 85860
catctaagaa ttccaaaaac agaaaattat ttttcctccc ctattacaag ttgggcattt 85920
ttttccaaag ctaaacaagt ctcaccttac aatccaaaaa taacattcct aagtattttg 85980
acaactactt tgatgttact tccaatcaaa agctaccatg caattattta cataagccct 86040
attcataatg accaaaggaa aaaaacggaa tcagaaagtc ttacaataga tgactgtatg 86100
ggaatccact cagacatcaa aagttgttat aaagattatt taaatgaaaa catttgagat 86160

actgaagata aaagaagaaa tcttaccaca acttactttg tccaattaaa gcagagctcc 86220
cagaaaaata cagctgccat taacccccatc caaggagttt cttgcaaatt cagctgccat 86280
gaagacagcg tactctttcg cattagcatt gataaacaaa aattaaatta taagctccca 86340
actgactgaa cagaaccact cttggctgag gggaccacag agtaactttc aaaactgagt 86400
tctcagcttt gctaggatgg gatgatgggg ttaacataca catcgttaaa cccactcctt 86460
tgctaaccat gatgaggctt tcttccctaa ggatttaaca gaaaccagcc ctttcaaagc 86520
ctccactacc gatatcaacc tctcctttct tgcctgataa gagaccaccc acaacagaga 86580
ggttctggcc agcgtacaga ggatgcacag agcgagtttt catgtcctct gcttcacctt 86640
ttaatgtcag agggctgaaa actgcaccct gggatcatgc taacactgcc atttttttgta 86700
catgggaccc atgaagaagc cagaaactca attgtgcatg catgcatttc tccttccata 86760
aatattcatg actcctcctg gagcttatta aataaatgta tttggccatt ccagtcagca 86820
taaattgcta ttttctttac ctcctccttg aagagtctgt ttctggcttc tggctggagg 86880
ctatgcttcc cagcctgtca gaaggacaac cctgcaggct acaacccttt ataggaaata 86940
aatctctcac tggttgggtg gctcatgcct gcaatcccag cactttggga ggctaaggca 87000
agtggatcac ctgagctcat gagtttcaga ccagcctggc caacatgatg aaaccctgtc 87060
tctactaaaa ctgcaaaaaa ttagccaggt gtggtggtgg gcatctgtaa tcccagctaa 87120
tcaggaggct gaggcaggag aatcgcttga acccaggagg tggaggttgc agtgagccaa 87180
gatcacgcca ttgcactcca gcctgggcaa caagagtgaa actctgtctc aaaaaaaata 87240
aaaataaaca taaaaatgaa gaaatgtctc ctttccaaat ttatgaacct catcattctt 87300
ccgttgacag cattaaaagg ttcaaaaaga cctttccata ctttcccaca gaagccctag 87360
aaattgtcat tttgttcatc attttggatg cctgagaact tgtaatccaa tgagtagaaa 87420
tgttggtacc ccatttatgg ctgtcaacct gccagttctc aggagtttgt ataaaagcct 87480
aaatccgaaa ggatctcatc ccattaggac ccttgtctcc ttttctgttg cctttgccca 87540
ctggctctgg caacaggggt ctttctttct ccttggctat ctttggatat gggggctccg 87600
tcttctgtgc caccttaggg aatgcctttt gcatgcatgg ctaagtcatt aaaaagcctt 87660
cagtttcagt aacattttga gtgagtactc tctgaagctg cgttggaatc tcaggcttct 87720
ttgtctggaa gataactctt gggctacaag tttcttatcc tagctttggt tttgaggcct 87780
ctctgttctc ctcttgggtt ggaagttatt cctggctttt tgtttcaagg tgtctctgtg 87840
atcttcaact tgctcctttc atgagaactt ctcagttgac taaattctcc cttctcaaac 87900

ctctgctatg tgttccacca atatggaact aattctattt cctttcctgt ttacatgatt 87960
ttactaagaa ttatttagaa atttaatcgc tcctttgaga aaatttttat cttccaaatt 88020
gcctcctttt agacttttcc tttcccagtt gagtctctca actccctgta atcactgaaa 88080
ctttaggcat cccactccat gccttggagt gctctccatg ctctcaatgt gctcaagaat 88140
ctgcaaaagc aaacatctgg ggctgaaaaa taaaatagaa aaattttat ttctcagcct 88200
ccataagatt gtatgtccaa acaaaagaaa atcttaaaaa tctccaaaaa tattggtgag 88260
aaaaaagctt tggccctcat atgaagaaga taaaaacttg ttccattttc cagatacaca 88320
gttataatac aaatacaaaa tggggcaaag acaaaaacca agtcttctat ataaactagt 88380
gaattttgta ttattgtaat aacattagtc agggttctcc agaaaggcag aatcaatagg 88440
atatatgtag atagatgaga gaagactcat taggggaatt ggttcacata attatggagg 88500
ctgagaagtt acacaatagc ctgtctccaa gttggagaac caggaaagct ggcagcatga 88560
ctcactccag atataaagga ctcagaatca gggaagccaa tggtgtaact ctgattctga 88620
ggccaaagct ctgagacact gattctgatg tcaagggcag gagaagaagg atgtttcaat 88680
ttcaggagat aattcacctt tcctcttcct tgttattcta tctgggctct caaccaattg 88740
gatggtgcct gtattcatcc atttttatac agctgtgaag aaatacctga gtctgagcaa 88800
tttataaaga acaaagaggt taaatgggct gacagttcca cgtggctgca gaggcctcac 88860
aatcatggca gaaggggaaa caaagacgtc cttcttcaca tggcagcaac aagaagaagt 88920
gctgagccaa aggggaacag ccccttatga aaccattgga tcatgagaac tcactcactg 88980
ccatgaaaac agaatggcag taacaaccac catgattcaa tcacctccca ctgggtccct 89040
cccacgacat gtacggatta taggaactac aattcaagat gagatctggg tggggacaca 89100
ggcaaaccat atcagtgccc atccacactg ggtcagggtt atctcagtgt cttccagaaa 89160
caccttcaca gatatgccca gaaattgtgt ttcaccagct atgtgtgtct ctcaatccag 89220
tcaagtagat gtctaaaatt aaccatcaga atatttatgc ctgtttcatg gctgaaattg 89280
tttgaccagc tatgtatgtt tcttaatcca atcaagtaga tgtctaaaat taaccatcag 89340
aatatttatg cctgattcat ggctgaaatt tcaggatgaa agctatgaaa tctctatttg 89400
tgtttgtata tctattactg tatgtaatgt atatgtgata ttttcttaac tccggatagc 89460
actgcaaaat tcatttataa aatcctataa aagtgctcta ttctaacttg gcttggaaaa 89520
aaataaccat ttataaataa atattcacca aactcctaga aatataggaa ctgatcaaat 89580
gtttttaag ttaacatgat ttggataaaa cttacttaaa tgagattaat ataaaatttt 89640
tggtgtaata aaactatgtc ttcaaagtta tcacttgaat ataaaacaaa cataaattcc 89700

tattctgctt gagttctagt caaataagct aatattatac ttacagaaat gtaaaatctt 89760
aaagcttata gatttgattc taattaagtt gtcactctta tgaaaaacat tattctttta 89820
tggtgaaaag atacacatgt atttagagtc agccagctgg actcagttta gacgatccca 89880
attttgttgc aacatccaaa gcttcataat caggagccag tcgaacatat gccttgttct 89940
ctttatcagg aaaaatcagg gtggtgacct tggccacatc actgtcatag agcttcttca 90000
cagcctgttt gatctggtgc ttgttggctt taacatccac gaagaacaca agcatgttgt 90060
tttcttctat cttcttccgg cccactcagt ggtcagcgga aacttgatag catagtggcc 90120
aagcttgttt ctcctggggg tgctcttccg aggatatctg ggctgcctcc ggagtcgcag 90180
tgtcttgggc cgcctgaagg tgagtgacat gcggatcttc ttttttgcgt gtggctgcgg 90240
acacctttca acactgcctt cttggccttt aaagccttca ctttggcttc ggctttagga 90300
ggagcaggag cttccttcgc tttcggtgcc gtcttgtgaa aagcgaaaaa cattatttca 90360
aaaataattt gttcacagta aatctgccta atagtagttt ccaaagtact tttgctaatt 90420
tttaacctta aacttaagct aagtaaaaga tttgcattaa atatctagac catttataaa 90480
taagatacaa tactaaaaca ttaattactg aacataaata attcaagttt atatactttt 90540
ggcttcctgt ttttacagaa agactaaaga tattttggcc cgttaataaa catgtttttt 90600
tctgccacac tgagaaattg tattatgagg aaatacatcc ctctagatgt tgggagacag 90660
tatattcata ctttttctaa cctactatag aatgctaata tatgacactt tataactgac 90720
tacttcctag ttttctctgg aaaataaaag attactaagt attaaaatta taatcagtat 90780
atgtaaataa aaagattaga aataatggaa taactagaaa caacccccatg caaagcatgc 90840
aagaaaagta gggcatgttt cacaagtaaa gtaggatgta ttttttataa ggaaaaccat 90900
acataagata caaataaaaa gagataccta accttccctg tgttacattt gtatgggtaa 90960
aatgttatgt tttcagaaat gatataaaat tcctgtaaat ttgttatgtc ctccttatcc 91020
atgctatgtg ccagtataga gtaatgagtc ataattccaa ttattatttt aaatattgtg 91080
ccgggtgcag tggctcatgc ctgtaatccc agcactttgg gaggctgagg aggatggatc 91140
acaaggtcag gagatccaga ccatcctagc taatttctta ctttgagatt gctatccact 91200
atttttatat atacgtgtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt 91260
attccaaatc agttgtccta gcttgctcca gcatgcctgg gcagaactag acaagcccca 91320
gcccataata catgccattc cttatttgga gatgcttcct taactatccc tgggcaactt 91380
cctttctttt ctttgttcta ttccccttac ctaattaaga aagtgttaaa ctaatagtca 91440

atcgggtaaa gtgtaaaatg tgaggtccta tttcagccag tggaaactgg acacagcact 91500
agggtagaca catcaggtta taagtaactc tgtctccttt gtttggtgtg ctcttgtggc 91560
tggacagcta ttgagtagca ccctttatgc agaaagtaaa gctcgcctcg ctaagacatc 91620
atttgttccc acgttgtttt tttttttttt ttttttttgg aacaccaaaa tcttcattcc 91680
caacagcact ctgagaaaag ccagcctgat acctagatta cagggttcac agccttcagg 91740
ttagtaaaga aggtcatttc ccggtaggcc caggaatttg gggatatttt gggggcctca 91800
agaagagagg aattcacaca aagccataag gactgcggct gaaatttgat agtatgtgct 91860
tggcttgggt tttagcctga ataaggcctt taaaagtcaa atctgagatt ctgtatgaaa 91920
acttccagca aagaaacttg aaagcaccta tgtggtcatc tcctgttctt gctgcactta 91980
tgtaaataat caagcaaaat ctaacaaaac tagacttatt tttaaaacaa taatagtctt 92040
actttgatta tgatcaaaaa tgatggttac tacagagaga aattttatgt ttcaatggaa 92100
aactataatt tagccaggca tggtggcaca tgcctataat tgcagcactt tgggaggcca 92160
ggagttcaag accagcctgg gcaacatggt gaaaccccat ctctaccaaa aatacaaaaa 92220
ttagatgggc atgatggcat gtgcctgtag tcacagctaa tcaggaggct gaagagggag 92280
gatcgcttgc acccaggggg tagaggttgc agtgagctga gactgcacat ttgcactcca 92340
gcctgggcga cagagccgga cccagtctca aaaaaatttt tatttctttt tgagaaattt 92400
gacccccact gtgtcagtgt ggggcggtgt ggcctagtgg aaggtgtttg ggtcatgggg 92460
acggatctct catgaataca ttaatgtcct ccatgggggt gagtgagttc tgctgtcaca 92520
ggaatggatt aattcctaca ggagtagcta gttaaaaaga gtctgggttc cttggcttcc 92580
ctcttgcttt cacttttgct atgtgatctc tggtgcacac cttgctcccc ttccactttc 92640
catcatgagg tgaaaaagac tgaggcccca ccagatgcaa ctgcccaatc tcagacattg 92700
cagccaccag tattttgagc caaatgaacc tttttttactt atacattacc cagcctcagg 92760
tattctgtta cagaagcaca aaatggacta agacacaaat gtaagtaaaa actcactgaa 92820
ggtgtaggga aaatggtgtt gacctaagtc actttgaaaa tgaatagaat ctgtaagctg 92880
aaggcaaatc aactatactt catccttgga ttccatttta caaagttctt tccaacagaa 92940
gcaactgcga acaactgtaa aaccacagtg tctgtatctg gaataaaaca atgacttaca 93000
ttaagtcgca gatggtggga accaggtttc tcactgttga agtgggaggt tacaaattag 93060
caaggcgaca aggctagaat aattcatgtg atagtagatc agaggtggag acataaacgt 93120
aaacttatgt ttagtttaat atagatacac acagttctac atagaaaact ttataattag 93180
gtgtgtatag gtaggttaga cacacacata tacttcctag cattactaat gagggacaag 93240

atacaatgtg ctctttcagc agccagacgt aagttttcct accattctga aaggaatcag 93300

gctccttgaa gaaatgtctg atactagaac tgggagagta aatataggag ccaggataat 93360

ctggaagtat cagaaagtaa gtaagtacta aaaaaattaa aatatatcaa agaaaaataa 93420

gagccaataa aaaaaagcta ccgattgcca acacaggaat gaattgtgca acataatgct 93480

gcagggttga ataatagcta aagcttaaag taattatcta ggtgtctgta tttgtatgca 93540

taggtgaata agcaaatgga gttgcataga aatctccttt gcaaaagaat tccaacccta 93600

acctgacaaa cagtagctct gcaaaatgat ccaagtgaat atcaaaggta acagttcacc 93660

ttgagaacat gaagtgacaa tgagggacat tctacaaaat gcctgaccaa tcctcctcag 93720

tactatcaag gtcacctgag atggaaagcc tgacacactg tcacagccag gaagagccca 93780

catgatgact acatgtcatg cgggatcctg gatgggatcc tggatcagag taagacacat 93840

ctaagggaat ccaaatgaaa tatgaacttt agtctatcag tattggttca ttaactgtga 93900

caaattgtgt aagatattaa taagccatgt gagacacact aatagaagat gttaataaga 93960

gaggaaacta ggttgcggct acatgggaaa tctttttttt tttttttttg acaatttctg 94020

tgtaagtaaa aagatgtaaa ataaaacttt atttaaaaca ctgtttttttg aacacttcct 94080

tgtttaatta tttataccat gaattactag taattgacac tgttaactag tcctattttt 94140

ttaaataaga gcatttatga cacaaaaaat taaacagtgc agactgacat ataaatcaaa 94200

acaaatgttc tttacatgtt ttctgttact gtagtaacac acatgtgtaa acttaattct 94260

catatttttt tcttgtgctg tggttgtgtc ctgggttcat tctctaaaat gctgttcacc 94320

ttagaccagg aaaaatatta accttacaga ctctgtttca attcatagcc aaatattttc 94380

acaagagtga ctttgtaaaa atatgttcca atggcaaatt gattcattgt gatgggatca 94440

cttattccga agacttcctg tctttatttt gttgccatgc ctacctttta gccataatac 94500

agcagaatca aatattgctc actgggaaaa aatattcaaa gaaagaaaga atgtggacag 94560

aacttatgac catgatgatt caatgtttta ccacaatgct atctaaaaca gaagagtgta 94620

aaaggatatt caaagtcaat ctcctcagtg aggctttgca gaaaatgagg aaactagaaa 94680

aacaaaaatg gcgggacatt ctacgggtga ttttacatgt tgctatgttt tatgggaaaa 94740

aaatacttta ccttttaaag aatcactaag aattattgga aacccaaatt ctgggatgtt 94800

tgcaaattta gttgaacttc tatgcaatta tgtctatata ggtagccacg aagttgatga 94860

ttttttaaaa atctgtgcct tatttgtgta ataaaataca caatgaataa ttaatactca 94920

taggaaaacc ttatgaaggg aaaataaatc ttggggaccc aaaatcacta agctaaaggg 94980

aaaagtcaat ctgggaactg cttagggcaa atctgcctcc cattctatcc aaagacaccc 95040
acctgctcac cgagataaat gcatacctga ttgcctcacg tggagagggt aatcagcaat 95100
gcaaaagaat gaaatcgttt gtctcttacc tacctatgac ctggaagccc cctgtctggc 95160
cttctcacct ttctggactg aaccaatgta catcttacac atactgattg atgtctcatg 95220
tctccctaaa gtgtgtaaga ccaagctgtg ccccgaccac cttgggccca tgttgtcagg 95280
acctcctaag gatgcatcat gggcgcacat cctcaagctt ggcaaaataa actttctaaa 95340
aaatctgaga gccgtctcag attttcaggg ttgacacatg taatgtagga tgtcaatgtt 95400
tataaaacag acattattct atctactatt agaaatatgc tgccaattaa ccttaaactt 95460
tctcaacaaa ataaaaaatg ttgaggtaca aataatacat ctaagcttaa gtggtgttgc 95520
aagttttaat acgcctactt ttcaattttt caatactatt tttactaatt taacactgta 95580
agaaaaatga gtaattaaaa caagaataaa agtgtttaca gggggtgcac atgtttcctc 95640
cagcctctgc ccaaccccag ctttcatccc aactgtcctg atggtggctc taagcatttc 95700
tcctttctct ataccaagat ctctccccag aaacaaaccc aaatcttact gtatgttatg 95760
gcacgttatg atgatgagca gtgatgagca gccgaagcct caaggaaggg atgcttttgt 95820
aaaacaagac ttgtggaatg taacatgtga aagtaaagcc catggcagag ctccctcctc 95880
agcacacggg gagcagacag gaagtttttc ctcaccttcc tcaatggcct gcagccacgt 95940
ctccccaggt cagtcttaag gacaacgaaa ctctggtctt cactgtggac atgccacact 96000
accaggtgct ccaaagccat ggtgacccgt cctcgggtgg gtcctgagga gaaaaaagct 96060
ctggttctaa tcctaaccct aaccctgtcc caagactttg accctgaatc taaatcctga 96120
tccctaccct ggtccctaat tctgacccta actttgaccc tgactttgat cttgaccctg 96180
accatgaccc cacctctaag catacttctg gccctgactc tgacccagat cctaatccta 96240
tccctaaccc tattattatc tttacaatct atgtctaatc ttactgtcta gtgctaaata 96300
gctgtacccg aaagcacttt taaattattt aacttctttt ccttgaattc tctaaggaca 96360
tcctaaagga gatgtcatta tgtattttgc attccctctg agtggtatgg cttcacatat 96420
gaagttctaa tactttgcaa gacataaaat gtttggaggg taacagcact gggttgttag 96480
ggatgtatgt tggcattcat gatagatttt ccttaaaata agaacaaatg gcttgagtag 96540
gcttttggaa tgtaggatgt ttccgttggt tcatttctgt gttcagtatt cccacatgaa 96600
tctaaacatg actctgctct tagtagctgt gcgaccctgg gaaagtcact caatctccct 96660
cagctaaatt ttgttgtgtg tgtaatgaga agagagttgt gatttgtatt tagtgaataa 96720
taacaaacaa aaggcattta gctttctgga acctggtatg tagtagaacc tcatggaaat 96780

actagctctg ttaataaaac tagcccaaaa caaggtttca aggtcaacaa cagtatcagg 96840
cagtgaagga catagacgag aagctgcttc tgcagcctgt agctcctgga ggcccatttt 96900
gtccatgatt tagcaggaac gcactacctt tccatgagga gaaactgccc acagaaacca 96960
acgccattct ttgaagacaa acatgtctta atagccttta cattaagtaa tagtgtaata 97020
taagtaataa tttgttatta gtaataatgt gaaattattt acactaccct aacccctaac 97080
cctaccccta cccctacccc taacccctaa cccttaaccc taacccctaa ccctaacccc 97140
taaccctaac ccctaacccc taacccctaa cccctaaccc taaccctaaa ccctaaaccc 97200
taaactgtaa accctaaacc ctgcgcactg tggttcacgc cagcaatccc agccctttgg 97260
gaggctaagg caggtggatc acctgagtcc aggagttcaa gaccagccag gatgacatag 97320
caaaacacca tctctactaa taatacaaaa accagctgtg aatggtgaca cacagctgaa 97380
gtagcagcta ctagggagac tgaagcagga ggactgcttg agcccagaac gtgcaggtta 97440
cattaagctg agatcgtgcc actacactcc aacctgggca acagtgcaag accctgtctc 97500
aaaaaaaaaa aaaaaaaaag acatggtatg atggctcatg cctatcatcc cagcaatttc 97560
gaaggctgag gcagatggat cacttgaggt caggagttgg agaccagcct ggccaacatg 97620
gctaaacctt gtctctacta aaaatacaaa cattagggcc aggcacggtg gctcatgcct 97680
gaaatcccag ctcttctgga ggccgaggca ggaggatcaa ctgaggacgg gagttcaaga 97740
ccatcctgac caagataaac aaaccccatc tcaaacaaaa atacaaaatt agcctgctgt 97800
aatggtgcac gtctgtaatc ccagctactc aggaggctga ggcaggagag tcgcttgaac 97860
ccaggaagcg gaggtgacaa tgagctgaga tcctgccact gcactcccgc ttgggcaaca 97920
cagcaagact ctgtctcaaa aaaaaagaaa gcaaaaagac aacccacaga aaggaagaaa 97980
atatttgcta gcacattata tatctaacaa ctgtccatta actacaatac atacagaata 98040
tgtataactc aacaacaaaa gcaaccaaat tacaaatggc ggaagagttg aactcacacc 98100
ttgccaaaaa gacatgcaaa tagaaaacga ggaaatgaaa agacgatcaa tatcattatc 98160
attatggcca tcaaaactga aaccacaacc acatactcct tcacacacac tagaaaggct 98220
ataatccaca aatattaagt aacaagtgtt gtcaaggtca gagagaaatc acaaccatta 98280
aatactgtat gtggaatata aaatggtaca gcctatttgt aacatagttt ggtatttcca 98340
caaaaagtta aaaacacgac aggcaaggtg actcatgcct ataatcccag cactttggaa 98400
ggctgaagca ggcagatcac ttgagtgcag gagttcaaga ccatccagag agacatagca 98460
aaaccccgtc tctactaaaa atacaaaaat cagccaggca tgctgccaca cacctctagt 98520

cccagctact agtgaggctg aggtgggagg accgcttgag ccccgaatat cgaggttgca 98580
gtaagccaag atggcaccac tgcactccag cctgaggaac agcacaagac catgtcttta 98640
aaaaaaaaaa aaaaaagagt aggcatggtg gctcacgtct gtaatcccag cactttggga 98700
ggccaaggca cgtggatcaa ttgagtccag gagttcaaca ccagccagaa ggacatagca 98760
aaaccccgtc tctactaaac atacaaaaat tagtcgtgca tggtgacaca cacctgtagt 98820
cacagctact agggagaatg aggaaggagg actgcttcag cacagaatgt gaagggtgca 98880
gtaagcagag atggcaccac tgcactccag cctcggcaac agtgcaagac cctgcctcaa 98940
aaaaaaaaca aaaaaaaaac tggccagtcg tggtggctcc ccctgtaatc caagcatttt 99000
gggaggcaca ggcgggcata tcacctgtga atagcagtcc aagacagtct gatcaacatg 99060
gagacatcca gtctctaata aaaatacaaa aaagttgctg ggtgtggtga cccatgcctg 99120
taatcccagc tactcgggag gctaggagga gaatcacttg aacccaggag gcagacattg 99180
cggtaagccg atgtcacacc actgaaatcc agcctgggca acagagcaag actcagtcta 99240
aaaaaaaaaa atcaaaaggc aacccacaga aaggaagaaa atatttacac gttatatatc 99300
taacaacagt ctgttaacca caatatataa ggaacttgta taactcaaca aagacaacca 99360
aattacaaat ggagaaagag ttgaacgctc gctttgccaa aaagacatgt aaatggaaaa 99420
caagcacatg aaaagatgat caatatcatt atcactatgg ccatcgaaac tgcaaccaca 99480
accacatact ccttcactca cactagaaaa gctataatcc aaaaaataca aaacagcaag 99540
tgttggcaag gtcagagaga aatcacaacc attaaatact gtatgtggaa tataaacggt 99600
gcagcctatt tgtaacagtt tggtatttcg tcaaaaagtt aaaaataggc caggcacggt 99660
gtctcatgcc tttaatccca gcactttggg aggctgaggc aggtggatca cttgaggtca 99720
ggagttcaag agcagccaga aggacatagc aaaaccacgt ctccactaaa aaatacaaaa 99780
attagccagg catggtgcca cacacctgta ctcccagcta ctagggaggc taagggagga 99840
caactgtttt agcctagaac gtggaggctg cagtaagctg agatcgcacc actgcactcc 99900
aacctggtag acagcgcaag accctgtctc aaaaaataaa aatcaagaaa ggtgggcatg 99960
ctgcctcaca tctgtaatcc caccactttg ggaggctgag gcaggaggat cacttgagtc 100020
caggagttca agaccagcca ggatgacata gaaaaacccc atctctccta ataatataaa 100080
aattagccag gcatggtggc acacagcttc agtcccagct actagggagg ctgaggtggg 100140
aggactactt gagcccagat tatggaggtt gcagtaagct aagatcgaac cactgcactc 100200
cagcctgggt aacagtgcaa gactctacct caaaaaaaat aaaaaaataa aaaaaggccg 100260
gtatggtggc tcatgcctct aaccccagca ctttgggagg ctgaggcagg cagatcacat 100320

gaggtcggga attcaatacc aacatgacca acgtaaacaa accccatttc aactaaaaat 100380
acaaaagtag ctgggcatag tggcacatac ctgtaatccc agctactcgg gaggctgagg 100440
gaggagaatt gcttgaaccc aggaggcaga ggttgtggtg agccaagagc acagcgctac 100500
actccagcct gcgcaacagg gcaagactcc gtctcaaaaa aaaaaaaagt aagtgaaaag 100560
acaacccaca gaaaggaaga aaatatttgc ttgcacgtta tatatctagc agtctgttaa 100620
ccacaatata caaagaattt gtataactca acaacaaaaa ccaaattaaa aaaggagaaa 100680
gagttgaaca acacacactt tgccaaaaaa catgcaaatg gaaaacaagc acatgagaag 100740
gtgatcagta tcattatcat tatggccatc aaaactgaaa ccacatccac atactccttc 100800
atacacacta gaaaggctat aatccaacaa atgtaaaata acaagtgatg gcaaggtcag 100860
agggaaatca caacccttaa atactgtata tggaatataa acagtacaga ctatttgtaa 100920
catagtttgg tatttcctca aaaagttaaa aataagccgg gcatggtggc tcatgcctgt 100980
aatcctagca ctttgggagg cagaggcagg tggatccctt gaattcggga gctcaagacc 101040
accaagaaca acatagaaaa accccatctc tactaaaaat acaaaaagta gccaagcatg 101100
gtgtcacaca cctgtagtcc cagctactag ggaagctgag gcaggaggac tgcttgagcc 101160
cagaatgtgg aggctgcagt aagctgaggt cgcaccactg cactccagcc tgggcaacag 101220
cgcaagaccc tgtctcaaag caaacaaaca aaaaagacct gccatggtgg ctcacgcctg 101280
taatcccagc actttcggag gccgaggcag gtggatcact agagtccagg agttcaagac 101340
cagccaagac gacatagcaa aaccacgtat ctactaaaaa tacaaaaatt agccgggtat 101400
ggtgccacac acctgtagtc ccagctacta ggaaggctga gacgcgagga ctgcttgagc 101460
ccagaatgag gaggttgcag taagccaaga tggcaccact gcactccagc ctgggcagca 101520
gaacaagacc ctgtctcaaa aagaaaaaaa taaaataaat aatggccagg cgtggtggct 101580
caatcctgta atcacgacac tttgggaggc agaggcgggt ggatcatccg agatcgggag 101640
tttgagacca gtgtgaccaa catggagaaa ccccgtctcc actaaaaata caaaaaatta 101700
gccaggcatg gtggcccatg cctgtaatcg ctgctactca ggaggctgag gcaggaaaat 101760
cacatgaacc cggcaggcgg aggttgcagt gagccaagac cgcaccactg cactccagcc 101820
tggggaaaag agcaagactc ggtctccaaa gaaaaaaaga gagactgaaa agacaaccta 101880
cagaaaagaa gaaaatattt gtgcattata tatccaacaa cagtctgtta actacaatat 101940
ataaaaaatt tgtataactc aacaacaaca accaaattac aaatggagaa agagctgaac 102000
acacacttcg ccaaaaagac atgcaaatgg aaaacaagca catgaaaaga tgatcaacat 102060

cgttatcatt acggccatca aaactgaaac cacaaccaga tactccttca cacacactag 102120
aaaggctata atccaacaaa tgtaaaataa caagtgttgg caagctcaga gagaaatcac 102180
aacccttaaa tactgtatgt ggaagataaa atggtgcagc ttatttgtaa catagtttgg 102240
tatttcctta aaaagttaaa aataggctgg gcaaggtggc tcacgcctgt aatcccagca 102300
ctttaggagg ctgaagcagg cagatcactt gagcccagga gttcaagacc agccagtacg 102360
acacagccaa accccatgtc tactaataca aaaatgagcc agacatggtg gcacatggtg 102420
gcagacatgg tggcacacag ctgcagtccc agctacttgg gaggctgagg aagaaggact 102480
gcttgacccc atattgtgga ggttgcagta agctgagatc gcactattac actccagcct 102540
gggcaacagt gcaacaccct gtctcaaaaa taaaaataaa aataaaaagg gccaggtaag 102600
atggctcaca cctgtaatcc cagcactgtg ggtggctgag gcaggcggat cacctgaggt 102660
tgggagttcg agactagcct gaccaacatg gacaaacccc atctctacta aaaatacaaa 102720
attggctggg cgtggtggtg catgtctgta atctcagcta ctcaggaggc ctaggcagga 102780
gaatcgcttg aacctgggaa gcagaggttg cggtcagccg agatcgcacc ataatactct 102840
agccttaaca acaaaagcga aactccgcct aaaaggaaaa aaaaaaatta gccagtgtgg 102900
tggtacagac ctgtaatccc agctactcag gaggctgagg aaggaagatt gcctgaacct 102960
gggcgatgga ggttgcagtg agccgatatc aggccacttc actccagcct gggcaaaaga 103020
gcaagacttg tctccaaaaa acagaacaag aaaaaggaaa tgcatgggac gaagtggcat 103080
atcctgaaat gaggactttc cttctggact ggggtttccg atgaaggtga cagtttatcc 103140
ttcagtctcc acaggtcacg aatttgccgt ccaccaagag gcaacagagg gagccccgcc 103200
aagtcccatg ccagaactat gacataatca cattccctca ctcatttcag tacctaaata 103260
ttaataattc atcagcttaa acatctacac ttactttacc aattttccat tgtatagatg 103320
aagaggtttc caaattttat ataggttgtc atgatgtgga caggactttt tgatagttaa 103380
ctatagcgaa tgactaaaat ataagtgttt aaacctaaaa taccttgtaa ctgttaacac 103440
agggctacag aacacagcaa cgtaacagtc tgtccagtaa attcttctga aattcctttt 103500
ttttttttta tagacggagt ctcactgtca cacaggctgg agtgcagtag cacaatctcg 103560
gctcattgca gccttcacct cctgggttca agcgattctc ctgcctcagc ctcctgagca 103620
gctgggacta caggtgcatg ccaccacacc aggctaattt ttgtattttc agtagagatg 103680
ggatttcacc atcttatcca ggctggtctc gaactcctga catcaggtga tctgcctgcc 103740
tcagcctccc gaagtgctgg gattacagga gtgagccact gcacccagcc ctcttctgca 103800
atttcaataa tcaattgtgc tatttgtctt tctttcagca atgagatttt atttttcttt 103860

cctaattatt tcaaacatga actttggttc cagagaacta gtatttcctt gatttataaa 103920
ttgagggcag ctgggcacgg tggctcaggc ctgtaatccc agcactttgg gaggccaagg 103980
caggcagatc actggaggtc aggagatcaa gaccagcctg gcaaacatgg tgaaacctga 104040
tctccactaa aattgcaaaa aatagccagc catggtggca ggtgcctgta gtcccagcta 104100
ctcaggagac tgagacagga gaatcgctgg aacccgagag gtggagactc tggtgagcca 104160
agatcatgcc actgcactcc agcctgggta acatagggag attctatcct caaaaaaaaa 104220
aaaaaaaaaa aattgacggt cgtctcacag acaatctaat aatgaattat ttttttgtct 104280
ttagaaaatc aacattaact tttctacttt tagatatcgt aattgctgtg acttgaagga 104340
cttatctaga aaaagcctta aaaaactacg gtcagcactg ggtgaatggg ttgagggaac 104400
ccacataaaa tccccaagac acctgggagt ccatgtcccc atgagtggga ctgcaggcag 104460
ctgtagcaga ctggatggga gaggacagca ggcaggagaa ctcggtgtct ggagtccacg 104520
gttctaaggc cagtgaaaac cactggcaaa gtgaaatccg aagcttgaca ggatgaaatt 104580
tgtgattgta aatgaatatt tgccatttcc aagtgagatc gccagtggtg gtgggatgga 104640
cgggtgctcc tccaagtggg ctgcagtgag gagagcgcgg caccacgcca ggatgctcct 104700
gccaggaaca caggatctgc acacgtttag gaggaaacgc tgggcagacc cagcttggag 104760
tcatctctgc tctttacatc tgttaaggct gtgaaaactg agagtcggcc ggatgcagtg 104820
gttcacgcct gtaatcccag cacactggga tgctgaggcg aatggatcac ctgaggtcag 104880
gagttcaaga ctagcctggc caacatggtg aaaccccatc tctactaaaa atacagaaaa 104940
ttagccgggt gtggtggtag gtgcctgtaa ttacagctta tcgggaagct gacgcaaaag 105000
aatatcttga acatgggagg cagacgttgc aatgagcaga gatggcgcca ttgcactcca 105060
gcctgggtga cagagggaga ctccctcaaa aaaaacaaaa aacagaacac tgagtctcag 105120
gaacagttcc cgagaaggaa aattgggccc gcatggaaat agacattttt ctcccaccta 105180
gggcagggag tgaagtgaaa taggtctgtg gagtggactt tcacatagaa accatgtatt 105240
tcctaaattg ggggttactt ggggatcacc tggaggagta ttcctggttt tggtgaaaca 105300
cacgggggta ttttttgtga agctgcaaat ctggcacagc aataacggct ggggaactgg 105360
agatcaagga gaaggcatac taagtgctgt tgcaagtttc ccagaagtat gacattattg 105420
ggaagtaaac tactttttaa aacaaccgtg gcaataccac gtcagtaagc cagagacaac 105480
accatgaagt ttcatgacag aggccaaatg cagcccaaac ccagcccagc agaggctgtc 105540
aactcagcgc cccagcgaga gccggaaggt tccatcctca gagctgcaga ccctctcgtg 105600

tgggctgcaa aggccatgtc tgcatcccgg gcggtatgta cgctctgaga gatacatgcg 105660
tgttccgggg gttatatgag tgtgacgggt gtggcgtgag tctgactgtg tcacgggcgt 105720
tccaggggtt acgtgtgtgc tctgagggac acatgcgtgt tccgggggtt atatgagtgt 105780
gacggctgta gcgttaggtg acgatgtcat ctccgcgttc caagcgttat gtgcgcactg 105840
agggacacat ccacgttccc ggggttggat gtggaaggca gctaccccga cgggtgtgct 105900
ctctgcatac gacgggtgct aacactagca tcacagatgc agtgttatta gcactacaga 105960
ggttattgtc agtgtggcgg gtgttctagt tgctttcctg acactacatt tctgttccaa 106020
gaccgcagct tggccctgtg gccgcctcgc cttgggtgtg gagaatgaac ctcgagtgcg 106080
ctggattcac aggggatttt ggtttctaat tttccacatg aagggtctct acccctcagc 106140
agtcagggct gaaaacagga aggattttac tcaaccatgg acgccgccgg ctcaaggtgt 106200
cccaaagcga ggggcgtttc ctggtatgtg ctgaggagaa cgcggctccc gcccttgcag 106260
ggtgcaggcg cggaggaagc gtgcgggatg cggccgcctc aaggctcaga aaagccgggc 106320
tcgcgcgtgc tctgctggcg gccgggggca ctgcagcgcc ctagagctca aggcactgtc 106380
ggaagctgag cgccctctgc taccccctcct gctgcaccaa ctaaaagaca gcatggagtg 106440
ttcggcgcca tcattctaga aatgcaaact gacacagagc ccattagccc gtgagtttct 106500
aaaaatgcag aaggacaat taattggaaa ccataggaaa tgaaatcaac atgaatgcac 106560
attttacaac ttatgcaaaa agtcactcaa catagtcctc agacttaaaa tgcaaaaccg 106620
tcagaggcct cttaaccaca gtgactttat ttcaaataaa ggcttttaaa aagttaaatc 106680
tgggcagggt gcagtggtca catctgtaat cccagcactt tggaaggcca aggcgggtgg 106740
atcacttgag atcaggagtt gaagaccagc ttgggcaaat agcaagaccc ttatgtctac 106800
aaaaaatata tatatatatt agatggcatg cttgcacata cctgtagtcc cagctaccca 106860
ggaggctgaa gcgggaggat tgcttgagcc caggagttcg aggctgcaat gagccagcca 106920
taatcgcacc actgcactcc agcctgggcg acagagtgag accctgtctc tctctctctg 106980
tcacacacac acacacgtta aatttgttgg attatatatt tcgggggttg agcacttttc 107040
gttataaaat atttatgatt gtgggaacaa gttaataaag acatgaaagt tatttaaatg 107100
tcccagaact ttaagaacaa aaagcattct tagtttaaaa ataagtttta ctttaaaggt 107160
aacagtacac acataaattg ttgttaaaat cgacagtaac aaagagaagt aacaatacta 107220
atagcctgtc acaaactgat tcttaataac ctatataaac aaacattaag cccgggcgcc 107280
gggtggctca tgcctgttat cccagcactt tgggaagccg aggcaggcag atcacttgag 107340
gccaggagtt ccagaccagc ctgaccaaca tggtgaagcc cagtctctac caaaaacaca 107400

aaaaattagc cgggtatatt ggcacgcacc tgtaatccca gctacttggg agactgaggc 107460
aggagaatcc ttgaacccag gaagcagagg tcgcagtgag gcgagaccat gccattgtga 107520
caggagagaa actctgtctc aaaaaaaaat tatatgttta caacaggtgc atttctcctc 107580
ttgctttctg aggacgccct gctatgtagc tgagtagtca ctaataaact atcttaactt 107640
cactatactc tgtgacttgc caaaaggtct ttcccatgtg aaatccaaaa acctgttctt 107700
ggggtctagg acaagaccca ttttataatg acaaaactat acaaattcta gagggaaaca 107760
tagaaagaaa gctatgtgac cttgcgtttg gccatgagtt ttaacacgac actatcagag 107820
gcatttgaac ccctcctcta tatgaactcc agggtggttt atgttccatt ggctaagaga 107880
aagttttctt caaaaatgtg acatgatttg aggtcaaaca ttaatatcaa gtaaactcaa 107940
aagattgaga agctagcatt agttctggga aaaccagaag tgtgcctttt ttggaaataa 108000
tcattggtag cacaaactta agaatctcca aaggaaataa aaatgagtta ttaacttaca 108060
gttttcacca attaagatat aaatgaagct aacgaaatcc ggaaatacaa tttcactgtt 108120
tttaatgttc attaaaaaaa aatccttatc aaatagcccc agtaagtcac caattaagtc 108180
tttactactt aaaagcaaaa tccacctatg tcctgaacag tatccacttt acgagcctca 108240
ttatatgtac gagataaaat tcagaaataa ataaatatac atgtatacgt atacaaatat 108300
atttcaaatt aaaaaatact tttagatagt ggtatgtatt acatttagaa attaataacg 108360
aagtaaatta tgggatgtca tccacgcctg tcccaaaggt accgaattta taaatcatct 108420
caggtgcgga gcaggacagg ttgaaaatag gaatgacatg aacccgcgcg gaacagctgc 108480
cggcgcggtg tccagggcgg cacccccgccc ggtcccggcc cctccagccc tgggcccgac 108540
ccctactacg cctctgcctc gacgcgaacg cggagcccga gcgcgcgtca cgccgtgtgg 108600
ggccgaagag gctgctaccc agaggcggag tgcgggctcg cgagggtccc cacccgactc 108660
tcgctcccgc cagcacctac ggactcgcgt ccccgccgcg cgccgactcg ggagcagcac 108720
cgcccccggc acaggagcct cacgcgcctc ttacctaaca ggaagttggg tggaagcagc 108780
gcggacccac ggcacaccga acgcactcca acagaacccg acgcagacac gcgctttcaa 108840
ccggcggaga cactggcagg gccagaaacg cgcgcagcgg gggcgggagg tcggtaagct 108900
ccccgcccct gcccgagacc ccgccccggc ccggccccgc ctttttctct gcctcccctc 108960
cctgcacgta cgggccccgc ccctcgcgcg acgttttttg ttgacccgga aacggattct 109020
ccggagccga ggtccgctcg ggtgagtgcc ctccgctttt tgtggccaaa cccagccacg 109080
cagttccctt cctgcggcgt cctccacacc cggggtctgc tggtctccgc ggatgtcaca 109140

ggctcggcaa ccgccctcct gtcggcgggg agtcccgcga cgcccggaaa tgctccgaag 109200
cctgtcgccc agctgccaga tctgcgtctg tgtccggttc cgtcactgag gtcgccccctg 109260
tccggccctt ccaccctagt tctcttcacc gtccgcccat cctatcgcgc gcggcctcag 109320
gtcccgattc ggcatgtggc ttgtcttcca tcgtccccac cctcgcccct cttggcccct 109380
cagggcagcc ctgggattcg gcagacgcca gtcctccctg agatgcttcc ccatccttcc 109440
ctccgccagg ccctacgtct ccgcaaaccc cacgcttcgg ggtggccgcc tcagacagga 109500
ccctgagtcc gagactgggg taggggacct gcccgatcct gtaacaaccc tcgtgcttct 109560
gcacaatcgc ctcccactag cggtgactgt tgggtgttta ccttccccggt gtcccactga 109620
gaagcgggct cttccttggc aggggcttct tcattgcctc gctgtggatg tcgaggtggg 109680
gcaggagagt gaggagaaaa cagaggaggg aggtagagcc aacgagcgag aaaaggggag 109740
ggaagtttag atgggaagtg gatgggtctg aggaatttga acaaacaccg acaatgaagg 109800
agagtgacct gagcaagtag tagtggggta aatggaaata gacaaaatgg gaatcagcag 109860
agatatggag gacagaatac aatgaggagg ccttgaccgt cagtagcaga gagggcagca 109920
gaagcctaat tcccaaattc tttagatggt tttctgattt ccaaattagt ttccctttta 109980
aatttattgt gtcaggttca gcttatgagg cctcaatact tttcagtctt aattgtatat 110040
tgaaaatact ttttgtttac taaatgcttt ttacattaat tcagtgtgca cttcgtaagg 110100
ataatgatga tttgagttag tttagtattc aacagcttcc tctattcctt tatatgatct 110160
ctgtatttaa tggctgtggc ataaagtttc caactaagtt taagtatcaa gttttctttg 110220
tgctgttttc tgcaaatatt gaaggatgac ctggattgtc ctagaacttt gttccaacag 110280
attacatgtg ttcataatga atagactgct caaagatatt tccaaagctc accttttatg 110340
tttttcagtt ccaataatta catcttttta aggtttatat tttttgatga cttaatgtga 110400
tgttctggag aagacaaatg cttttaatca atatgattaa aaccgtgaaa gacaaatcgc 110460
tgttacttaa gagtgtgaca tatgatctga aatctttagg gggcagggat gttaagggaa 110520
aactgccact atcgtattaa ggtcatgcca ttcctgtgaa gctggtgctt gttactctct 110580
actggcttct gttcaccttt ccaccggccc caagacacac acatagtgac acaaggcagt 110640
ggacagggaa agagcaagac tttataaagt aagcacacaa caaaggtatc tttctaatga 110700
ggaggaggtg ttggttctgg gaaggaagct tgggatttgg gtattcagga tccagaagtg 110760
agagagcctg ggaagttcag gaaccagaga aagaaaaagc cttgcccatt ctcacccatg 110820
acactgtgct cagcaggtac tagcagactt caggctctgt gactaaaagg ggtcagacca 110880
gttgatatac ccacagctgc catgtaagga tgtgtgtgga cttcactagg gaagaacggt 110940

gttatgaaag aaggggcaga aaaactcacc tgttggtctg catgtagagg tttattgtcc 111000
tgaattcctg gaggttcagt gaaaagcaga agattgtctt ttacacatgt tgagttatgc 111060
ccccatatat gtggttgtgg taaagaaaga gggtgtgttg atgagaggtc ctgaaatgca 111120
ttttcctaat actcagcagg ggcttctcaa gaaggatctt ccctaagaaa gaagctcaga 111180
gaacaaaaat ggaaaaggat tagatatggc actttcactg gaaaaagtca tgttattcat 111240
tgattgtttt gtcatctccc gccttaagtg ttgtttttag gatgtggtaa tctctgaccc 111300
tgcctaacac atttcccaac tcacccatag ccttccctta acgtcctccc atcttcacgc 111360
tatcacactg tgacccagtg aattcgaact tgtgaagttc cattcggggg atcatatggg 111420
aagggcttca cacccagaca tagattatag atgggaagtg ggccacatgg tgtcagtgag 111480
gcaagtatgg gtcgtttagg gacaatgcac tgtcagatct ttgttgacca tgattagaga 111540
aactgtgcat attagtagtg aattaatgtc aggaatatct gacaaatcct ggaaaagaag 111600
attgatgaga ggaaatgtgt tctgcccaac tgtataatgc atttgaagct taaaacaatg 111660
aatcagtatt gatctggcca caaaatatta atgatttgaa ttaaaaagaa aagtttagaa 111720
aatgatagct ttgacaaatt aaggtagcat ttcatccaca cgatggagtg tgttttattc 111780
agtaattgat ttaaaaatgg aatcaaccta agtgtctaac aggagggagt tttataaatt 111840
gttcacagaa catctgttcc aaggagacct tgatgttcat agatttgtaa agaatgctgc 111900
ttactagcac actgactgct ctgcaaatgt ctgagggttc ctccacttgg ggcaagttgg 111960
gggtttgatc gcagagtaaa taaatggtgc attttataat gtaatatatt ctagcaagat 112020
gcagcccaca aactgtatag atactcttat gtaccacata aagttcatct actactttaa 112080
ccagaacttg atactgtatg tatgtttttt ttttttagat ttggataaaa tgacaactca 112140
ttgttatttc cagttcacaa agtaattgtg aggctgaata aattttatta ttttatagac 112200
atatgtgtaa aatgaatttt tctatgaaac tcatttttga tgtatattag atgctatttt 112260
atattctgta gtttaattat atgtacgcac acacaaacac acacttcggt gtcttattat 112320
gtttctgcag tgaaaccaaa atccttcctt cacgcccttt gattttatgt tttcctcagg 112380
aaggcaggag ctattgtata tgataaaata ttatgtttta ttcagtccac ttatgaaatt 112440
gtttaatatt gttataaata tttatatgac ttattttaaa tttccaaata acataggtta 112500
catgaaattt gacaacttta tttttttctt ttcacaacta ttttgactgt atactcacca 112560
aaaatcaaaa tttagacaaa attgactttt agactaattc tcatttttta catgtaaaag 112620
accacatggg acttttaagt ctaggttgcc ctgagtctac agtcactgag gttttatgtc 112680

actatgtcct ccattctaat aataggattt tcaggcttta ttcatgtcat ttttatatcc 112740
tcattaagtt ttaaatttta tttacatggg tctacaaatt tatttcaaat cgtagtcata 112800
atatttgcct gttgtaaata gacactgatt ttgtgtgttt gctttttta aggactaatg 112860
ttgctaaaca ggaaatattg atttcagaat attcataata gttttgccca ctttttaaat 112920
attcttatta gtattgataa ttagaattga ttccactttt tcaagtttac agtcacgtca 112980
tctgagaata actacagttg cagctctttg actccatttt tgtagtccct ctccttttcc 113040
ctcttgtttt ggtcccacct caggcatcat gtgcagtggt gaatggcatc agcctcaccc 113100
agcctccttt ttccagcctt acctttagtg gaaatggttc ttttgttaac tgctgaatat 113160
attgttgaga ttttattgat taagaagaat tagtccccac aatttggtat gatttttaaa 113220
gattttatat tatttttaaa gatttaaatt atatgaaaat gttttttcaa aggtctatta 113280
atgtgatttt tttaatcttt aaaattactt tgtgaaaatg ataggttttc tagtatggaa 113340
ttatcctttt attattgcaa taaactccac tttaccatgc tctgtcatta tttaaccata 113400
ccagtgatgg ccaggtggcc aaaataaata gccaaatggc taaaattgta ttgatgattt 113460
ttgcaaatgt aagtaaggaa aattgttggt taaatttgta gttattgtta cattcatgtt 113520
cattttgatt agcataataa actaatgagg acaggcttat ttttctcctt caaaataact 113580
taggttacaa aggaactaga agtgatttca catgtaagaa ctctcacaaa tcacttttac 113640
agttaaactc tgatatataa cttaaacatt aaaattggct aatcagattt ttgtgctgat 113700
taatgaggga aagtttttac tctttttgtg gaaagtaata tacatattca tgttggaata 113760
taattattcc catttcttag attttaaatt actactttta aataaataca gtctctttta 113820
ttaacctgtg ttttttcttt ccaccgtggg tcttttcagt ttcatgattt tgctctcaaa 113880
actttttaat tattgatttc tgtcaaatct gttcattcat tacattattt tattatttat 113940
taaattgttt tatcttttta agtcttatta atatgtactg aatttgtaac aatttggaaa 114000
gtcaagtaac tcctgtttta tctttttctt ggtttatgag tgtttttaaa gttttacgtt 114060
tcttgaagat cacagctgta gccccaattc catggttctg gctacttaca tttatcatac 114120
ttattaatat catgaatgta attggaatac ccctttgatt ttactggtga cgtataccca 114180
ctagtgtact gagacggaaa aaaaagtctt tagaactcag ataaatatac agttcatatt 114240
tactatttat gtatgtgtga tctcattatt aaattactct atcatgtttg tggaattagc 114300
agtttctctt tgaatttgga tgtttctagt tatgtgtatt tccaacgtat gtttttagcc 114360
acatacactt tattgaatat catatttggt gtttaatttt tgctaggatt ataggctgga 114420
ctccagatcc aaacttgaca tgtagcagac ccattaaaaa catacattaa gcccctagca 114480

ctgttttaat ctccatggcc tggctgagct tctgccatct gtcttcctag gcaccatgag 114540
gtctggacat ctcatttggc ataactcagc tgtggccatt ggtggatctc atccttagta 114600
ctagtccctg ctggcagggg tgacccaggc ccacataagc cattgctggc ctccttggag 114660
gacttagaga atcctgagat tgcccatgag gatggacatg cctttcagtc tagcacccac 114720
ctttagtgat gcctgtggag attgagaagc tcacaggggc cttggatgtc tttcttatac 114780
ctccattgtc tgcagcgtga ctcccatact cttgagccaa ggtagagaat ttttaggagg 114840
cttgtgtgga ggtttatggt ggcccccatg gttctgtgag actggtagaa agcacagacc 114900
ccttagactt ctccccaagg agaatacgtg agactagtgg aggaaaggag agtaatgaaa 114960
tatgcatttc gtgtcccagg ctatcagagc acagctctaa ggaaaaatac agggcatcgt 115020
atagcaactg gcacagctct gtgagactgg gagatattgc acaaccttga aaaatcaaga 115080
tgtgacccta ctgaatgaac aaaataaatc tccaataatt gaccataaag aaatacaggt 115140
ttctggctgg gtgcggtggc tcacacttgt aatcacagca ctttgagagg ccgaggtagg 115200
cagatcattt gaggccagga gttcaaaatc agctttgcca acatggtgaa atacaaaaaa 115260
aaaaaaaaaa aaaaaaaaaa aaattagctg gtcgtggtga cgggcaccta taatcccagc 115320
tactcaggag gctgaggcag gagaatcact tgaatccagg aggtggaggt tgcagtgagc 115380
tggtatcgtg ccgttgcact acagcctggg caacgcgagt gaaactccgc tttaaaaaaa 115440
agaaaaagaa atggaggttt ctgattttcc tgataagaat tacaggtaat tgccttaaag 115500
gaggtcaatg agctatgaga caacactgat aacaagtaaa atctggaaaa ggatacatga 115560
acaacatgag aatatcaaca aagaaaaacc ataataaaag aatcaaatat agattctggg 115620
gctgaagaat acagtaactg aactggatca atacaaggct tcaagagctg acttgatcaa 115680
gcagaagaaa gaaccagtga actcaaagac aggttatttg aaattattca atcagaagag 115740
caagtagaaa aagaattttt taaaagtgaa gaaactgtct gtctttgcta aaaattggag 115800
ggtcctaaga actcctcccc gcccccactg ccaatgcaga gtcttactct gtcacccagg 115860
ctggagtgca gtggttcgat ctccgctcac tgcaacctcc acctcccagg ttcaagcgat 115920
tctcatacct cagcctcccg aatagctgag attacaggtg cctgccacca tgcccagcta 115980
atttttgtat ttttagtaga aacggggttt tggggtttca ccaagttggc caggctggtt 116040
ttgaacttct gacctcaggt gatcctcctg ccttggcctc ccaaagtgct gggattacag 116100
gcgtgagcca ccatgcccgg caagaactcc tttttatgtt agattcacta gggtttagca 116160
gctcacagaa cccaggaaaa cagtttactt agctgattta ttacaaagga cattttaaat 116220

attacatatg aacagccagc taaagagtta catacagcaa gttttggaag catcttaggt 116280
ttaggaggtc tgtctccaag cagttggggg gtaccattgt ttcagcatat ggatgtgttc 116340
ttcacccacc cagaagctct aggaatccca tcattcaggg atttttatgt ggtgttcatc 116400
aagtaggcat aattgttatt aactcgatct ccagcctctg tccctttccc aaaggatagg 116460
gggtgggact gtacgttcca agcttctgat caagtcatgg tctttcaggt gatcaccccc 116520
catcctagag cctagtaata attgtctcat tagaacagaa gacactctta tcacctatga 116580
agttccaagg cattacgagc tctgtactgg gaaccagggt caaagaccaa aaagaacaaa 116640
agcttctcct agcaactctg ttgcttagga aattacaagg gttttgggtg gctctgtgcc 116700
aggaactggg gatgaaaacc aaactatcta tttcttacaa ctaacaatgt cacatacatg 116760
ttcaagtttt catgttctta gtgtcctttc atttcaactt gaggaactcc ctttagcatt 116820
tcttgtaagg tatgtcactt gtaaagtgtg tcttttaagg aatccaccat gataaaatga 116880
aatttgaagc tgcttggtag ataaattcat gctacattta tctacaggtc agacttgagg 116940
gactggtatt tctagaagcc tcacatggaa gagacagaat cattcagtac aagtgtatcc 117000
agaggaccag cagaagggag aaggaatgga gggaggctcc tgagggctga gatgcatgtg 117060
gagaaagcct gcaagcacac aaaccgagaa taattaaatc tgagaaattc caggatttat 117120
ctgtaggtgg agccacatct ccatgattca gggattctta ggatttggaa tcatagaagg 117180
aattaaacat ttcagaattc catgcgctag gtggcatatg aaactccatg attttcacat 117240
ttctaggtct aaaataaaaa tatttatatc tttattagca gcaatagtca tttcttctga 117300
ccctgggaga ggagagccac caacccaacc caccccctac ccactgcatg tccttgttgg 117360
ttggactggg gctaatagct ttggggcaga tgttagaagc aaaactggag tgtcatggtt 117420
tttttgtttt tgtttttgtt tttgctcaga tttgtcttct tagtgcttgg atggtgtgag 117480
tgaaaaccca gaggaataca tttggtggct gagctagtac aatgccatca ccggtgagtg 117540
ggaaattctt ctttctactg aaatttgtac ccctgttacc agcctaaggg cagattcatc 117600
ctattaacat ggatgttcta agtgcactca aggatccaag ctccaattaa gattccccag 117660
ggcttcggaa tgtttacatt ggctcaaaga gtcatcaaga agtaatgtcc tttcaacagt 117720
acactaaggc attccagcct ctactaaggc tgtgtattaa gatgtgagag gtttttgttt 117780
ctctcatcca gtctcaggga aatcattcat tacgagcctc tcatggcctt gttggggaaa 117840
taaattcact cattacctat gttattggca ggagtgggct tgagagtata tgtgggtagg 117900
tggtgaaaat aagtgagagc aggttatagc ccatacaaag gcaagctcag ttagtctagt 117960
gtttcaggtg ttaggggagg gctgtttaac ttgaagggaa agcagatagg gttaggacag 118020

aggagacaat gaggaattat tcatttattt ttcctatctc aaaatcttaa tgtcttgaga 118080
gaataaatgt gaacttttga aaaacttaaa aagcaaaatt aaaattctta ttacccttgt 118140
ccccaaatta acctctgatc aaatttgata actggaagca actggagtgt tgtttcttta 118200
attttggttg tgcattaagt gatggagtat aggaaacaga gtaaatttaa aactctgagg 118260
aaatttttga agtggagaga ccaggacaat caaaggattt tttttcccct aaatctagag 118320
acaacatgaa gaaacaaaat agaatagtac ctagtgcatt agtccatttt cacaccgcta 118380
taaaaaacta cctgatagtg ggtaatttat gaagaaaaga agtttaactg actgacagtt 118440
ctgcaggctt aacaggaagc atgactggga ggcctccaga aacttacaat catggtggaa 118500
ggggaagcaa gcaccttctt cataaggcag caggagagag accaaatcag gaaatgccac 118560
acactgttaa atcatcagat cttctgagat attactagca tgagaacagc aagggggaag 118620
ttcacccccca tgattcaatc acctcccacc ggacccctcc cccaacatgt ggggattaca 118680
attcaagatg agatttgggt ggggacacag agccaaacta tatcacctgg tgtttgaaga 118740
tcccacataa aattgagaaa ggaaatcctc agaccatgga aagtggcagg atgagaccat 118800
ctttcagtac tgaagtctta gagtccctgg cttgtgctgc tgagccattc atccttatcc 118860
attaacagtg aacacctgag ttgtgtagac ataagaggct gcatctgctg ataccaagtt 118920
ctatatgaaa gttgttcaca caactgagtg ttctcagtca tttcatgaat aatgtatttg 118980
tggcttgtat ctaaaaagtg atagatagga accactttac atactatctc attggacctt 119040
tttgaactca taacaggtct ttattttatt ctgaggacac tgaggtccta tagtggaata 119100
tctaactata gtcttgatta aaacgtgaca aattatggat gctgcctccc ttgtagtgag 119160
tctatagatt ttcttgaagg tggtggagag gagaatttta gttctaaatt tccaagtaca 119220
gatttcataa ttagtatctg taagttatac tttagaagtc tattgggaaa tcttcaggtt 119280
atattatgcc acaccacatg tgatatttct ctatgtgaag ttttatgtat gagtaaatct 119340
gaaagccaga ttcccagttc agatttaaag caatgtgaca ggaaccccaa acactgtttt 119400
gagttttctg ttcataccac ccacacttcc ttagtacagt cactttgatc ttgctccact 119460
gaacattggc agagatagcc ctgtttgcag tagaatgtcc ataatgtttt aggattccat 119520
gaccttcgag gatatcattg tagacttcac tcaagaagag tgggccctgc tggacacatc 119580
ccagagaaag ctgtttcaag atgtgatgtt ggagaacatc agtcatctgg tctctattgg 119640
tgagtctctt tatatttatt atgtatgtat atacggattc attcactcac tcatttttca 119700
ctgattcatt ctttcattct acacgtgctt agaacagctt tctcatctat cacttcaact 119760

tctgctttga tcctttcata actctcacaa ttacctgaca gccatttctt tccttttcac 119820

ttatattgat ttgtcctctc tctagaaagt catctttctg accacagttt cacatccttc 119880

ttgctcttta atctcccaaa ctcagaaaag ttatggtaat tcactgcttt ggtatgcata 119940

aataaatgta ttgatttctt taaagtaatt attctatcat agggactgtt ctgcacagaa 120000

cctagattgt tctggtggag ctaatattta ttgcatagtt ttttaatata atgtcaaata 120060

ctatgacaat ttgtaatttc tcactaagtg aaaacactga ggattctgaa atcagtattt 120120

gaagtgaggc atggccatca gcaattatag gtcttttatg tctgggaaca agttcaagag 120180

ttttcatttt gctcgtgaag gactgtcaat gttgtcttca aggtactctt cccaggctga 120240

ccttcagtgg ctaacttatc cttcccagta ggctgccctg tatctgataa ccttgtacat 120300

ttgtcagcac agaactcaaa atccatgtat ctttttcccc aaaacaggca aacagctctg 120360

caaatcagtt gtgctttccc aattggagca agtagagaaa ctttcaacac aaagaataag 120420

cttactgcaa ggtgagctct aagaagcagt gcttcaatag gaggaggaga aacatggcca 120480

gtgagtgagt aggacccaac agttgccaaa ggaagatttc ttttgttttt ttagacagaa 120540

tctcactctg tcacccaggc tggagtgcag tggcgtgatc tcggctcact gcaacctctg 120600

cttcccagat tcaagtgatt ctcttgcctc agcctcccga gtagctagga ctacaggtgt 120660

gcgccaccat gcccagctaa tttttttcta tttttaatag agacagggtt tcaacatgtt 120720

ggccaggctg gtcttgaact cctgacctca agaaatccac ccacctcagc ctcccagagt 120780

gctgggatta cagtcatgaa ccaccacgcc cagccggaag gtttcttaaa tttgcagtgt 120840

ttctgaaatg taggcaaaaa cctgagggaa acatttctca gatattgtca ttatactttg 120900

taggtatcaa tttttattca agtatctctc tgtcattgtc tttgtctttt gtaaagggga 120960

tatttgtgta cttatttgag ttaaactatt acatactagc cctttataat ggtcctcttc 121020

tttgaaaatt tttctttcct tcctcgactt gcctttattt ttttatatgc tgaaaatgtc 121080

agtagtcaat gtgctataat actcttctcc ttaaagtatg gttaatttaa cattctttcc 121140

ctgtctgtgt gtatttgaaa cacactcaaa tgggctttgg agctatttaa catttttatt 121200

cccctaatgc ctatatagca tctttttttt ttcatttatt tcaggtagag aagttggcat 121260

taaacatcaa gagataccat tcattcaaca tatctatcag aagggcacgt ccaccatcag 121320

cacaatggta agctttatgg atgcaaaccc tgttcttaca tatagaaacc tggacattaa 121380

acaactttgg aatttggtac aggtacctga ctgtacttaa agccctccca gcagttttag 121440

atagtttgga tttagtgaag acgttaactt caaatcaaaa ccataatatg aggccttatg 121500

acaggacaac tgtacaaact tgactacgtg ctgaaacttt caaacatgat aaagtcttaa 121560

taactagtca gatagctctt cagttgggat gctacaacag gaaaactctc tacatgcagt 121620
tagataatat actacgtttg tataactgat ataggaacaa ttgtaactgg agtctaccac 121680
tgaatgatta ttctagaatt aatatgtaga gaaatgaatg aagtaatgaa tgagtgtgga 121740
taaaccttta atagtctttc atttcattcc caaaaccaga gatctcatac tcaagaggat 121800
cctttctat gcaatgactt aggagaagat ttcactcaac atatagcatt gactcaaaat 121860
gtgattacct acatgagaac gaaacacttt gtaagcaaaa agtttgggaa aatcttcagt 121920
gactggttat cctttaatca acacaaggaa attcacacca aatgtaaatc atatggaagt 121980
catctatttg attatgcctt tatccaaaac tctgccctta gaccacacag tgtgactcac 122040
actagagaga taacattgga atgtcgtgtg tgtgggaaaa cctttagcaa aaattctaat 122100
cttaggcgac atgagatgat tcacactgga gagaaaccac acggatgtca tctatgtggg 122160
aaagccttta ctcattgctc tgatcttcga aaacatgaga gaactcacac tggagagaag 122220
ccatatggat gtcatctatg tgggaaagcc ttcagtaaaa gttctaacct tagacgacat 122280
gagatgattc acactagaga aaaagcacag atatgccatc tatgtgggaa agccttcact 122340
cattgctctg accttagaaa acatgagaga actcacttag gagataaacc atatggatgt 122400
ctcctatgtg ggaaggcttt cagtaaatgt tcttacctta gacaacatga aagaactcac 122460
aatggagaga aaccatatga atgtcatcta tgtggaaaag ccttctctca ttgttctcac 122520
cttagacaac atgagcgaag tcacaatgga gagaaaccac atggatgtca tctatgtggg 122580
aaagcattca ctgaatcttc tgtgcttaaa cgacatgaga gaattcacac tggagagaaa 122640
ccatatgagt gccatgtatg tgggaaagcc ttcactgaat cttctgacct cagacgacat 122700
gagagaactc acactggaga aaaaccatat gaatgccatc tatgcggaaa agccttcaat 122760
cactcttctg tccttagacg acatgagaga actcacactg gagagaaacc atatgaatgc 122820
aatatatgtg gtaaagcctt caatagaagt tacaacttta gacttcatag aagagttcac 122880
actggagaga aaccatatgt atgtcctcta tgtgggaaag cctttagtaa atttttaac 122940
cttagacaac atgagagaac tcacactaaa aaagcaatga atatgtaaga atcatcagct 123000
gtagcgttaa cactaaatac accaaggaca aacatactac aggaatatta tgtctgtaat 123060
cagtgtggaa aagcctttat ttatatttac cactttgctc aacctaaatg aattcaaggt 123120
agagagaatc cagatgtatt taatgtttat ggcacaaact tcagactcta ggctgaccat 123180
atacaacgtg agagaatgaa actatagatc aaaggaatgt ggaggagtct tcatccacag 123240
ctctgttaaa taaatgggag aaatcacatc acgaaaattc tgtgcctgtc gtcagtgtga 123300

aaatgccttt gctgataatt tatcctctaa acaaatgagt aaaatccaca ggcaagcaac 123360
catatgtctg taattgctgt gcactctcat tcagctaagc accaattttg gtgtgtgcaa 123420
gaaaattcat tataaggtaa ctgataaaaa caggaaatat gtgaaaatat tttttattag 123480
gtggatgagg cctcttgaac aattccagac attcatagtg gagaagttat tcaatgaaaa 123540
ctcatgagaa atccttttct taatacagca gcacttctat aatagatcag aattcacatg 123600
gtgtagaact ctcaatgaca tgaatggagg gtagtcctca gtaaattact cattccttag 123660
tcaataccag catttttcca gtgagaaaac tatcttgaca ggatagtgga aaaaccttca 123720
ggcagctttt atgtcaaaaa agtgagacag ggatgaaaac tctaaaaagc cattgatgag 123780
atgtatagct gggggacaaa acataaagcc atcaagcacg tgcttgagaa aaaaattata 123840
attttgaata aagactttct acttaaaata tgtgggttga aatgtacaat tctgaaataa 123900
cctgggaata ttgaatgcag aattatgtaa gaagtaataa gattaaatta gtactgtcaa 123960
aaatacaagc attaagtgtt gttgctgaat aatctaatag gtttattaaa atctgtgttt 124020
tttgtttttt gttttgagac agggtctcgc tctgtaaccc aggctggagt gcagtggcgc 124080
aatctcagct caatgcaagc tctgcctcct tggttcatgc cattctcctg ccacagcctc 124140
ccgattagct gggactacag ggacccacca ccacaccagg ctaatttttt gtatttttag 124200
tagagacagg gtttcactgt gttagccagg atgatcttga tctcctgacc tcgtgatctg 124260
cctgcctcag cctcccaaag tgctgggatt acaggcatga gccaccgcgc ccggcccaaa 124320
ctctatgttt ttaattcagt tttaaacaca tagatttggg tcagttagaa aatgcggatg 124380
ggcatggcgg gtcacacctg taatcccagc actttgggaa gctgatattg gtggatcact 124440
tgaggtcagg aattcgacaa cagcctggcc aacgtggtga aaccccatcc ctactaaaaa 124500
tacaaaatta gttgggcatg atggtgtatg cctgtagtcc tagctattca ggaggctgag 124560
gcaggagaat cacttgaacc caggagatgg aggttgcagt gagccaagat catgctactg 124620
cgctccagcc tgggcaacag agtgagactc tggctcaaaa caaaaagaca gtgacattca 124680
atggaactaa tacacataga acacaaaatt ataggtccta actatagtag tggtatatat 124740
gtacatggta atgattaagt cadacatgga ttatgaaaga ctcactttaa aagtacagtc 124800
ttatggtgct taaatttgcc tttttgtttt taaaccactt tatcaaagtg taattgacaa 124860
aagctgttac ttaatgtata caacttaata agttttgaga taaggataag cccaggaaac 124920
catcaccacc accatctgtg ccacaaacat tcattctctc caaaatttcc ttccctcatt 124980
tttcattgtt ctctttgtga taaaaccact tacatcacag caacctgtag caaattttta 125040
agtatataat acagtattga taagtatagg caatatatta tatgatttaa cattgcaaaa 125100

ataaaactaa ttacaaatga atctatttaa atataatttg gcagtgctgg ataattgtgg 125160
ttacatttgc atgaatgtct cccagaatca ggtatgagca tcataacaga gatttttgtt 125220
gccatgggct ttttttcttt aagaaccttt ctgttctgtg tgtaaatgtt taatattctc 125280
acttctcaca agggctattt atggaatctt agcttatata ttcctctcta gcctctaaag 125340
cttacacttt aaattaatct gttttttttt tctttttttg tttcatcttt attcactcca 125400
tcctacccag aagcagaaac cccactattt tgcacaaaac aaaaatgtca gcttattttt 125460
cctccgccta gacaggccat ctttcttctg ggaccttatg ttcccttcat gttaattttc 125520
aagtgcttga gaaaatccag tgtgatactt cattgactct cccctttctc atgaattcta 125580
cctcagaaaa tcctgtccga acaggctacc ctcatgccta aagcagctgt ttcatgtatt 125640
tcgtttaagt tttgttactg ttaatggtgg gttggtccaa taacatccac agtcatgctg 125700
ggaacaaaaa tttttactc aaatatttta agccaaataa tgcttattct atttttatgg 125760
gtgaaataat taaatcagaa ttttcacaat aatgactatt tctatacgaa aaagttctcc 125820
actgttcaca gcttaacatc acattaaatc cattggtgtc agctgcctca tttaccacat 125880
gcgaccataa ggcccggctc ttttggcctg tgacagaagt cagtgtattt tctccctgtg 125940
ccacatgtgt ccctgctccc agtcctgggt ttctgtgttg atgccgaggt ataagatacc 126000
catagtaaga gcacacacat gcacagccag atttcctttg atatcagatt aagaagtggt 126060
tcctgcagaa atttttagat aagggctagt aagttttgag tcatcaggtc attgccatgg 126120
aaagggaggt aacccctggg tattgccatg gcagtggtaa atagatatgg cagactggtg 126180
ggtatctctg gaaagttgct tttgctatgg ctttgtttta gctactcctc aatctggtcc 126240
agtgtctgag ccctacctct ggagtcaagt cccaccccct acctcatcct ctcctcagag 126300
attagatatt cctccttaat cttaagggtg ctgtagaagg gcagaagtct gtattctgta 126360
actgcttcct gctgagctta tgggcatagg ccctgcctag cactggagga gtaaaaatcc 126420
ctgggtacag gccgggcacg gtggctcatg cctgtaatcc cagcactttg ggaagccgag 126480
gcgggcagat cacaaggtca ggagatggag accatcatgg ctgacacagt gaaaccccgt 126540
ctctactaaa aaaaatacaa aaaattagct gggcatggtg gcgggtgcct gtagtcccag 126600
ctactcggga ggctgaggtg ggagaatggc atgaacctgg gaggcagagc ttgcagtgag 126660
ccaagatcat gccactgcac tccaggctgg gtgacagagc gagactccgt ctcaaaaaaa 126720
aaaaaaaaag aaaaaagaaa aatccctggg tacctcaact aagggaccca caggcaggac 126780
actttttcat tctctgggtc agtaaacagg atggttggaa ttcttctgcc agcattgtct 126840

ttacctggaa gttttgtaat ctagaagaca caaactttac taagaggtta aacaaggaag 126900
tgacaaagaa tagtaagata gctatcaaag gtcctaggag aggtaaagac cagtgagact 126960
tgggaaggta cttttcatag atgaccagat acagttggga gtcagtgccc tgattatgta 127020
accaggtaac ttgctcatag atcttttgaa tgttaatctc aacttgtcca gatttgttaa 127080
tatacatgca gcaggtttta ctaataactt cacagactcc tccttgttca gctagtaaat 127140
aattcaacac tagtctctta tagagaacta aatttgccaa agagtctaag gacttgattt 127200
ccctttaatg cctgacctgt gatagtggct aagctttcta agggtttgag tcaagttcct 127260
tagagttaag tcatggtaga caaagctgcc ccagggtgct gctaatccta tcactgccct 127320
catttctgcc agaattaatc ctatcgcttg cttacttctg gtattcttgg gtctattggg 127380
gttatagaca gtgacccctg gtgagtcaag ggggggcaat gtacattcac ttctgttcca 127440
agtacttgac aaagaaaagc tactcctaaa agaacaggtg actccctaga gttgggagtg 127500
gttacagatt ctgatttatt cccgttcatg gccacaaaca gaagccctat ggggtatgat 127560
gtttattctt tgctgtcaag ttgggtctat agagatattt tctccctgtt ccagtggggg 127620
tggtcagata atctttgttt cccagaagtg ggcagtactt ccaccttcct ggactgggca 127680
gtcatttctc ctttgtatgt tctgatccag aaatcaccat atatgttttc ttctcactta 127740
caagtggaat cccacttact gcagccttgg aaacttgaca actatagttg gatcagagag 127800
catcactcca cttttgtgtc attaacacag acgtgagagc aaaggataga atcatttgtg 127860
cactggagat atggatatct aacttcccag gtccagggaa tagtggtgga ggaggggttc 127920
aagtggaata cattaagtgg gtgagagctg cacttaacta gtaggggttt gattatttct 127980
ggattgctat ggttagttag gaggccaggg gggatggtca tgagattttc caggtaagcc 128040
agaagatata actctctatc ctggggatgt tgatgacaaa tctaacaact gtgaagatga 128100
ttccctgatg ctataatctt agaaatcttt actatagagt tatgttctca cccacactgg 128160
atcagggtaa ttggaagagc aaacatcaac agtgacaaca tggtgtccag ctaggcatta 128220
gcatggtctc tatacccaac aaggacaaaa caggtgtttt gcagaagttg gctaaagcaa 128280
cataaaagaa gttcaattaa gaagaagaga aaaattaagc tcctattccc acccacagca 128340
tcacatttcc acttttagct gagtgttgaa tcttttaaat aggtaccaga ggtcttccaa 128400
aaactcatag atgtaggtca tgatgtcctc tttttgtgcc tgtgactcag aaacaggttt 128460
aatcatggac aggtataccc aactggttct tccctgaagt ttcacagtgg tgggagtact 128520
caataaaacc tgatagtggg ccttccattt tggttgtagt tgatcttcag gggatatttc 128580
tttccaagtt ttcagcaaaa ctgcatctcc tggttgaata ggggggttaa ttcttttatt 128640

aatctcctgg ttgaataggg gagggggggaa tactttgttt ccatatgctt ggagggcctt 128700
ttgaacctgg cttcttcagg cagcggggaa taggggcctg ggcttgttgg ataagtggga 128760
ggggttcctg atgactttgg agtgtaattc tgcaccaaag aactagtggg gtccccctca 128820
aaagtaggag actggggagg ctctgaagtg ggagcacaga tctcagagga acagctaaaa 128880
gggggtcatc tagggtatct ggtgcagctt cagacacatt ctacagctag cccttagatt 128940
aggatcctgg tagagggaaa taaaagcctg cacatagcaa acttcttacc attttatttc 129000
cttttcacac aacaaatcta actgtatgat atcattataa tgtaaagaac cgtgtctaga 129060
ataaatatgt tggtttatca atttttattg aatccaaaca ttattgcaat agtaaacaag 129120
gtttttcttt ttcaacctgt ctaataattt gaagctactc caatggccta aatgacaccc 129180
gagtggcgag tctttttgaa tgcttactgt tgtccccatg tctagtaagg ctcactacaa 129240
ggggttttag ttagcctaag tttagcaaat gcatacttac ttttcccttt tcatttccca 129300
ctttctatag ttgccaaggt gttacaaaag tagattagga aaacctagcc aataccaatc 129360
aggacatagg cgtgggcaaa gacttcatga ctaaaacatt gtagggaaaa gaaatagaga 129420
tcagactatt actgtgtcta tgtagaaagg caagacataa gaaattcaat ttggacccgt 129480
accttaaaca attgctttgc tgaaatgttg ttaatttgta actttgcccc agccaatttg 129540
acccaacttt gagctcacaa aaacatgtgt tgtatagaat caaggtttaa gagatctagg 129600
gctgtgcagg atgtgccttg ataacaaaat gtttacaaac agtatgcttg gtaaaagtca 129660
ctgccatgct ctagtctcaa taaaccaggg gtacaatgca ctgcgaaaag ctgcagggac 129720
ctctgccctg aaaagctggg tattgtccaa ggtttctccc catgtgatag tctgaaatgt 129780
ggcctcgtga gatgagaaag acctgaccgt cccccagccc gacacctgta aagcgtctgt 129840
gctgaggtgg attagtaaaa gaggaaagcc tcttgcagtt gagatagagg aaggccactg 129900
tctcctgcct gcccctgaga actgaatgtc tcagtataaa acccgactgt acatttgttc 129960
aattctgaga taggagaaaa cccccccta tggtgggagg cgagacatgt ttgcagtaat 130020
gctgtcttgt tattctttac tccactgaga tgtttgggtg gagagaaaca taaatctggc 130080
ccacgtgtac atccaggcat atacctcccc ttgaactgaa ttatgacata gattcttttg 130140
ctcacatgtt ttttgctgac cttctcctta ttatcaccct gctctcctgc cacattcctt 130200
ttgctgagat aatgaaaata ataatcaata aaaactgagg gaactcagag accggtgcca 130260
gtgcaggtcc tctgtatgct gagtgccggt ctcttgggcc cactgttgtt tctctatact 130320
ttgtctctgt gccttatttc ttttctcaat ctctcatccc acctggtgag atatacccac 130380

aggtgtggag gggaaggcca cccettcaaa catcaaaagc aatggcaaca aaagccaaaa 130440
tagacaattg ggatctaatt aaactaaaga gctcctgtac agcaaaagaa actaccatca 130500
gagtgaacag gcaacctaga gaatgggaga aaatatttgc aatctaccct atccgacaaa 130560
ggactaatat ccagaatcaa caaagaactt aaacaaattt acaagaaaaa aaacaacccc 130620
atcaaaaagt gggcaaagaa tatgaacaga catttctaaa aagaagacat ttatgcagcc 130680
aacagtcaca tgaaaaaaat gctcatcatc actggtcatc agagaaatgc aagtcaaaac 130740
cacaatgaga taccatctca caccagttag aatggtgatc attaaaaagt caggaaacaa 130800
cagatgctgg agaggatgtg gagaaatagg aaggctttta cactgtcagt gggagtgtaa 130860
attagttcaa tcattgtgga agacagtgtg gcaattcctc aaggatctaa aacacgaaat 130920
accatttgac ccagtgatcc cattactggg tatataccca aaggattata aatcatgcta 130980
ctataaagac acatgcacac atatgtttat tgtggcacta ttcacaatag caaagacttg 131040
gaaccaaccc aaatgtccat cagtgacaga ctgaattaag aaaatgtggc acatatacac 131100
catggaatac tatgcagcca taaaaaagga tgagtccatg tcctttgcag ggacatggat 131160
gaagctggaa accatcattc taagcaaact atcacaaaga cagaaaacaa aacaccaaat 131220
gttctcactc ataggtggga gttgaacaac gagaacacat ggacacaggg tggggaacat 131280
cacacacaca ctggggactg acaagggtgg gggctgggag agggatagca ttaggagaaa 131340
cacctcatgt aaatgacaag ttgatgggtg cagcaaacca acatggcacg tgtatacctg 131400
tgtaaaaacc tgcaggttgt gcacgtgtac cctagaactt aaagcataat ttttaaaaag 131460
tggattatga gcttcaaatg ggcagttgga ttttgaacct aaatgccaca gacagcaacg 131520
gttggtagag aggtgggctc aaaaatggaa gggagggact gtggaaggga gaaatggaag 131580
aggtaaacag tgctgcccaa ggggagacct cagaggccct gacctgctgg gtaacctatc 131640
ccgtagcaga gacactgaaa aaaatattca cgtggccaat tgcctaccac tgtaggtggc 131700
tctccattat gccaggggcc tgggaattcc catttccttg gaccaagagt ggcttgagca 131760
agctagttgg aagacagcat aaaggaaggg ttagcagctt gctattagga aaatacttct 131820
aacttatagg gcagaaaagg gcaagaccaa tactccccta gggagagggc tataactcat 131880
atatccctca gaatcctaga gggaatgtca acacaaatac tccagatcat atggggggtg 131940
gccagaatac caatgttgaa aactcagaag gcccaagttt cagccaacaa gggtcccttc 132000
accaaatcct gaaaaccctg gggcacccag aatgcggcca acagtcaatc caagaccaaa 132060
ttggggtcag caaacaacat gactctagca tcccgaagta aaaacagtgg ggatctctca 132120
caaccaagta tcctgcctta atcgtcccca aacaattaac agaaaggtaa aaccaaacat 132180

aagactgcac acattttagg actgaaaata aaataactaa tggaacaaca caatggagtc 132240
cgaagagaaa gtactcaggg aaggggtgac aaggacatgc tctagccaaa gacgtttatt 132300
tcatttccta gttctcctga tactatggcg atgggggcat aagggacact cacctgtcca 132360
ccagagcaca tatggtgctg actgattttc cccatgggac ccaggtgaag atctcgccag 132420
gatacctcag cttgggtgga cttaactgcc acaaagggtg ggtcctgcac aggggggcc 132480
tgtaacccac tggtcggcca gtcagacagg tgggtgtcac ataaggtggt gacactatgg 132540
ctgccctgcc agtaggctca gctgccgcag tgggaggggc ctgcactgtg tcagtaaccc 132600
accaggctgc aaattttctg aacttttata ctgtgcttcc cttataaaat tgaatgcctt 132660
taacaccacc caagtcacat cttgaatgat atactgctca gaaatttctt ctgccagata 132720
ccctaaatca tccctctcaa gttcaaagtt ccacatatct ctagggcggg ggcaaaatac 132780
tggcagtctc tttgataaaa cataacaaaa gccacctttg ctccagttcc caacaagttc 132840
ctcatctcca tctgagacca cctcagcctg gatttcattg tccatatcat tatccgcatt 132900
ttggttaaag ccattcatca agtctctagg aagttccaaa ctttctcata ttttcttgtc 132960
ttcttctgag ccctccaaac tgttagaacc tctgcctgtt accgagttcc aaagtcgctt 133020
ccacattttc ggctattttt tcagcaccat cccactctac tggtaccaat ttataatatt 133080
agtctatttt caccctgctg ataaatacat acccgaggat gggcaattta caaaaaaaag 133140
gaggttaaat ggacttatag tttcaccttg ctggggaggc ctcacaatca tggcagaagg 133200
caaggatgag caagtcacat cttaggtgga tggcatcagg caaagacaga gctgtgcaga 133260
gaagctcctc cttataatat catcagatct catgagactt attcactatc acaagaacag 133320
cacgggaaag acttgcctct attattcaat tacctctcac ctggtccctc ccacaacacc 133380
aaccatgctt ggctaagttt ttagttctag tttcatagag atggggtctc actatgtttc 133440
aggctgatgt caaactcctg ggtaaagaga ccctccaacc tcagcctccc aaagtgctga 133500
gattacaggc gtgagccacc aaagctggcc cgtttttctt gatatatcaa aattattcca 133560
tacagtcaga taacttttct tttcttttct cttctttttt ttttgagacg gggtctcggt 133620
ctgtcgccca ggctggagtg cagtggcgcg atctgggctc actgcaagct ccgcctcccg 133680
ggttcacacc attctcctgc ctcagcctct cgagtagctg ggactacagg agcccgccac 133740
cacgcccggc taattttttg tatttttagt ggagaccggg tttcaccatg ttagccagga 133800
tggtctcgat ctcctgacct tgtgatccac ccgcctcggc ctcccaaagt gctgggatta 133860
caggcgcgag ccaccgcgcc cagccagtaa cttttcatgt ggttactaac agccatggat 133920

ttccctgtcc aaggtaccag tttttcggtt gcatttctct atatactcat agccgtggac 133980
actgtctacc tgtctgatga aattcaagta accttttcat taggtttaac ttccaagaaa 134040
tctaaatggg tttcttataa acaaaagcaa tcacactata ggaaattttt ctttaccttt 134100
ctcacaacta gcctaaaaga caaaaataaa gattgtacat gttatcaagg caattccttc 134160
cttgtcttaa ttgggtttta gattagttag gaaaagagct ataaaagggt taatgttttt 134220
acatctatgt aaccttctgt attgctatta tttaacagtg acccctgatt ctgtttgatt 134280
gagtgttttg agtcttctga catctttggc aggtttcttc aagattaaaa acctatatta 134340
agtctttttg gcctaaaact aacttcggga ttttgaaggt tgacccctgg aaaccctcaa 134400
aaatattgcc tcttacctta tagagattaa atggttagac ttatctggta aaatatatgg 134460
gcgacatttt accacacagg gcacaaagga tatcaagtaa taagtgatgg aagatctttc 134520
agttacactt ataggtatgt tattgatata aatgttcctg acataaatgt tccaaaaatc 134580
atatatattg atgaaaatct gttgtcagcc atacttttgt tttgttaaat atcttctaaa 134640
gttatattca tataaatatg ttataaatgt aagtattcta agattatata caacttataa 134700
agatctcagg gacctgatgc aaagctgtaa gacatgattc tggttgttat aaaatgctac 134760
atataataaa tataaccaaa ttttcttatg aattgggaac ttttgtcaga ttttaaccgt 134820
ggttaggatt agcacagtgg ctcatacctg taatcccagg acttcgggag gttgaggtgg 134880
gaggatctct tgagcccagg agttccaggc cagcctgggc aacatagtgc gaccatgtct 134940
ctacaacaga aaacaaagtt agctgaatgt ggtggcatgt gcctgtggta ccaggtactc 135000
aggaggctga gatgggagga tggcttgaga ccaggaggtc aaggctgcac tgagccatga 135060
ttgtgccact gcactccagt ctcaaaaaga ttaaaaaaca aaatttataa cagtattact 135120
gttccctcaa aagctactcc tacaggagtg gcacaaagga tatcaggaaa aaaaaaaccc 135180
tcttaaatgc tattcccatt gtcttcccac agaaaattgc ctggtccatt atcgagtcat 135240
gaaaacaaac aaaaaggata aaccagttcc ttattacaga gctggactaa aatcttatat 135300
ataaaaccat tctaggctta aaatacataa tgaaacaact gaaatgcctt acagcctttt 135360
aaatgaataa actcttaaca gagcttggag accagattaa aaaacataag attggataga 135420
aagtcattga tatgacccaa ttggtcacta cgagtaagcg ctttgaaaga cttttagaat 135480
cataaaaaat gctaaaagaa agaataaaca ggctaataaa ctaatatctt tacaagtaca 135540
aaagctacag gaacagacct ccttatatct gttataactc aaaactgata tgtcctaaac 135600
aaaggaaacc tgggtaagct ctatacctcg agatggctgc attcattgta aacaatgagg 135660
tccctggaag acatgtcatc tgctcttgga gtagtcctct aataggctgg ctccttttgg 135720

gccacacagt attcccatca gagaaagtcc ccgagggttt gacaacaatc caccctgcag 135780
gggtggagga cctgaggaat tctctggtga ggaacttcct gtaatacctt ttttttgaaa 135840
ttaaaaaaaa tattgtgggt acatagtagg tatatatact tatggggtac atgagatgtt 135900
atggtactga tatgcaatgt aaaataagca catcatggag aatggggtaa tgcatcccct 135960
caaccattta tcctgtgagt tacaaacaat ccaattacac tcttctaatt acttttaagt 136020
gtacaattaa gttattattg actatagtca ccctattgtg ctatgaaata ttaggtctta 136080
ttcattctat tttctgtacc cattaatcat tcccacctcc cccctgccag ctcccccttc 136140
taccactacc cttcccaacc tctggtaacc atccttctac tctttatgtc catgagttca 136200
attgttttct tttctttctt tctttttttt ttttttttga gacagagtct caccctgttg 136260
cctaggctgg agtacaatgg cgtgaacttg gctcactgca acatccgcct cctgggttca 136320
aacaattctc ctacctcagc ctcccaagta gctgggatta caggtgcccg ccaccatgcc 136380
cagctaattt ttgtattttt agtagagatg gggtttcacc atgttggcca ggctggtctc 136440
aaactcttga cctcgtgatc tgccccacc cccaccttag cctccgaaag tgctgggatt 136500
acagttgtga accaccacgc ccagcccaat tgttttcatt tttagttccc acaaatacgt 136560
gagaacatgt gatgtttgtc tttctgtgcc tggcttaatc cacttaatat aaagatcttc 136620
agttccatcc atattgttgc aagtgactgg atctcttagt tttttataga tgaatagtac 136680
tccactgtgt atacataaca cattttcttt atccattcat ctgttgatgg acacaggttg 136740
cttccgaatc ttagctatta actaatacta agatgatgaa gattcttgta cactatttgt 136800
ggtcactgga gtcactgtat tcactttaat aacaactcta ataaatcaaa gtatccctct 136860
gagtaaaaaa atacttctgt gatgggtgtt tcaaatccta tccagggaat ccccatgtct 136920
caacctgtcc atatcatgct tggatcattt tagaaaaaca tgctttccta ctatgtgata 136980
ctgccccagg aaatgtgatg gaatgacatt tactttctga gttgagagaa cacataacat 137040
tctgtttcaa gggagaaatc atcttggaat ttccggattc tccagaacac aaaattatta 137100
attaaattat taaaagaatt aaacctataa aatatcaaat agactattct aagccattgc 137160
ctaaattttc ccaatatcca ctaaaattgg aggcagttca gggactttca ccaattatag 137220
aggaattaat taaatgagga cttataattc cttcactact ccctacaaca ttccaatcct 137280
accaatcaaa aatctaatgg acaagttgga gacttgttca aggtttacgt gcagtaagca 137340
aaactgcaat cccaagattt cctgtggccc taaatccaga aaccaaacag aggaaaattt 137400
aatagaacca ggtctttatg gaggtcactg tcaccacatc tgagtaactt gggtgcagaa 137460

tctggggaca tgattgactt tccttaattg gatctacaca atttacctga ggagaaatgt 137520

tttgctaaag aggctagcct tgattagatt tggcttaaca ggagccaagt tattcaggtg 137580

ggtcccttgg attatacagt tgatgagatg ataggactga ttagcatata taattgatga 137640

ggttatcaac tgcataaaaa gagggctcac cactcacatg gtgctttccc aggagagtgg 137700

aagaagctct gagcaccgga gtgtggtgac agcgacctcc ataaagacct ggctccattg 137760

gattttcctg tttggtttct ggtgagtact ggagaaattt ttaccagggc agacgcatcc 137820

catttatttt cgtcaataaa ttttaacgtg aaaattattg tttaattgga ctacaggtat 137880

ttggtggcaa gctctctgag aggagtttag gttactgtgg acatgtaatt tctctcgaat 137940

tctagttcat atgtaatggt cagagaaaaa cttacctaat cttggcacac aggagttgat 138000

ttctctgggc tgggcatgtt ggttcatgcc tgtaatcctg ccactttaga aggctgagtc 138060

gggaggatca cttgaggcca gaagctggat accagcatgg caaacatact gaggtcccat 138120

ctctacaaaa tataatttaa aagttacctg ggcatggtgg tggctcatgc ctatagtcct 138180

agctgcttgg aaggctgagg caggaggact accttgagcc caggaaatgg aggttacact 138240

gagctgtgat c 138251

<210> 97
<211> 140
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (20)..(20)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (63)..(63)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (72)..(72)
<223> n is a, c, g, or t

<400> 97
gcggccgcgt cgaccgcggn cgcgtcgacg gcaaaggaga ctgctgaggc tgttgctgat 60

ganatactgg anaaggctgg gccacttgtt gctgtgtctg ctgttgcact tgatataact 120

gcctacccct aaaagccaaa 140

<210> 98

<211> 492
<212> DNA
<213> Human

<400> 98
ttttttttt ttttttttt ttttaatata attatttatt gtaatcatgg tttatagaaa 60

tcacattttt tatagattaa aaaacttaaa aataaaaaag tactaagtta aaaaaaactc 120

cactaggaga ttactaaaac tgtaggccac attcatcttc ctacaattct tcacccacaa 180

aataaaatcc aatttaggag gctccattaa ctcttttaat atatttctaa atcttaaatc 240

tatatttcaa aatgaacatg gtacttcata tgggcccact tttcataatt ctttcaactc 300

aatgttttag ccaaaactgc aaacatttga aatttaattt tgaataaaaa ttacagctta 360

tgcaccaaga taacattaga aagtgtcttc agacatttta tcaggtattt tcctcattac 420

acccaaccaa acacagaaag aaatatatat ttttgaaatg tcaattactg ctatgctatc 480

aaaagctgac at 492

<210> 99
<211> 275
<212> DNA
<213> Human

<400> 99
ttttttttt tttttttggc agagcagttg ccagaactac tattatttgg ttttttttt 60

ggttttggtt ttttttttt ttttttttt ttgcaaactg cagttggaca agcatcttaa 120

ctgcttttat ctgaaagagg ggggaccact gttgtctcag tcacaaaaat tctgctgagt 180

gtctttccac tggaaatacc ataagataag ctctcataag acaatttcac tattccaagg 240

gcagaatgtg gcaaaagtgg ggctgctgct agctt 275

<210> 100
<211> 222
<212> DNA
<213> Human

<400> 100
ttttttttt ttttttttt ttttttttt ttttttttc ctttgacagt gaccatttat 60

tacacacatc agactggggg aagaccattg acatagctga gcaccaggta gggtgtcctg 120

ggtattcggg catgagagca gcaggggcct cctgacgcgg gcaggagaaa catggcaccc 180

accaggagga ggaagaggag gaagaggata aggaggaagg tc 222

<210> 101
<211> 440
<212> DNA

<213> Human

<400> 101
gttctgctct tggtgctttt gtttttgttt tattttgtat tgtatgacct tgaattacaa 60

gtcttcccct cccaggaaag gactgttctt cagggctgtc ctcagattct tatttcatat 120

cttaaaaatg acatagtaaa aaagacctag atgtgatagt aaacccttat tttttaatat 180

accaaacagt tgtaaccaca aaagcactgt aatcatcatt tcttggaaaa gttataagca 240

tatttgaaac ttgaaacttc taaaatcttg gttagagaag aaaactaaat tctacattta 300

gtggaattaa gcttctacct aatagctttt ataccaactt tccaaaagta ggagtggtac 360

caggtttcca tgtaaaccca agaaagcagt ttatccatcc acacagccca acccttgctc 420

caatgagcat attactgggt 440

<210> 102
<211> 559
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (548)..(548)
<223> n is a, c, g, or t

<400> 102
aattcgcggc cgcgtcgacg ctgcgagaag acgacagaag ggccattcta ctaattttaa 60

agaacatctt ggaattttac actcttggaa tcatagtcgt agaatccttt ttttgagaca 120

gagtctcact ctgtcgccca ggctggagtg cagtggccag atctcagctc actgaaacct 180

cagcctccca agttcaagtg attctcgtac ctcagcctcc tgagtagctg gaattccagg 240

ctgtactcac tgctttgctc atatccccgc tcattaccag ggacaggcca gcacccctgg 300

cattgcatct cacatatcca ctgatggatg gagaacagac tgaaattcag tgccttagag 360

accacacact ccaacccccct cattgtgcag atgggaaaac tgagagccat agaagggaag 420

tggcttgccc aaagccacac ttactgtttt ccccacactg taccacaaac tttcaccatt 480

cttcaggttt ggaaaaatac taataaactg atcaacacta aaaaaaaaaa agcggccgct 540

cggttgtngc gcggccggg 559

<210> 103
<211> 388
<212> DNA
<213> Human

<400> 103

tttttttctc ccagtcattt gattttattg tgtttttact aagcattttt attatcttca 60

tgtagtcaaa tgtgtcaata ttttgttgcc actggatatt tccaccacgt ttccttctgt 120

atttatatgg cttcattttc ttacatttgg atcctggatc cagatggagt tcattcttgc 180

atatggtgtg aagtacaggt ctaacttcaa ctttctccaa ggggctttcc agttggctca 240

gcaccattta ttaaagtctg ctttgacctg cgattgaaga tgccaccttt aactcctcat 300

cccccacccc taagaaacct cacggaacat atgacccaag agcagagcag acataaaaag 360

attaactgag ctactgagat tcggtcaa 388

<210> 104
<211> 545
<212> DNA
<213> Human

<400> 104
tttcttttta ttgctaaaga gtattttatt gtaaatatat atcacaattc tttattcttt 60

ctgtcattta tgggcattta atttctttga ataaatttaa caagttgcaa atgaatattt 120

agcaaattgc actcagatta aaataacaaa ataatctctt atcagaagct aagaaataca 180

ttttcctcct cctcatccat atccaaagac ggttctgaaa atgccttttc ttctctatta 240

tagcaacacc tagtggcttg agaaggccag gtctagaggt atgcatttac ggctgggaaa 300

cactgacctt tagctttgaa gacctcaggt agcacctaga cgtcggctat aaccgcataa 360

caatggtccc catctgaaac catttaagtc agaatctttg gaggaagagg ccaggattgg 420

taggttataa aagttgccca gatgatttta atgtgcagcc aaggctaaga gctacttatc 480

tagaccagtg gtttgcaaac ttttgtcaaa taatcagaat cgcgtgtcaa acacagattg 540

ctggg 545

<210> 105
<211> 580
<212> DNA
<213> Human

<400> 105
ttttttttta atgttaacat tgagagtcat tacggctaaa gctttgcctt catcacatag 60

ctaaaaagaa ggttgagctg gaacttagga tactttaaag catttcctgt ttaggtatta 120

ggctgataga gaatcatgtg taactggggt cagcattcct ataatttttt gagccaaaga 180

cagaatacac actttaccct gacaggtttc ttccagaatt taggacagct gatgaaatga 240

aaagacacac acccaagcca agagtgcaaa aggatgtagt agcatgattc cgccaaccaa 300

atgcctcata ccctcagacg tcccaaatcc agtggtgagc aggtaaattt ttaacaacaa 360

tctttctttg tgaggaaaaa agttcctgat ttccataatg taaatacttt cactgactgg 420

tttgaagcca tcaacacgtc aactaacaat tggttcctgc atgtctataa gctggcttta 480

gcacaccact gcaaacctac ttattactta tattttcaga tacattacag cacttatcaa 540

ttctaacatt gtgaaaaact gctgtgcttt aggcatcttg 580

<210> 106
<211> 618
<212> DNA
<213> Human

<400> 106
tttttttttt ttaaagtttt acttggaata tgtgtatttg ctaaagttac aagggaaaat 60

attgcaaatt atacatcatt tgaaaaatta tctctcttta gttaattttc agtcacaata 120

ttggatgtag cagctccaaa tagaggttac ctgattattg cttttataat tgaattctta 180

aagagtttac atcataatta tataattgta tttttaaaca tcacagaaac ccaacatgta 240

cctatttgta atcatcagag tatatacatc tgattaggac tcagctatgt tcaaggcttc 300

atcgagccca acatacaatt atcatttgca ttttctgcta caatcaaaga aaacacattg 360

tgtgctatta gtggccattg caagaaggaa gatgctgttt tcaataacag gaaatcaaga 420

acaaacaaaa taatcgtctt ccatttaaaa aaaaaagaaa gcctacagaa aagtgaaaag 480

gacagggtcc taaaaacatc tagtgatgcc aataaaatgg aatgtttttt aaaaagtgat 540

ttgtctcact gaagctgcag aagggtatcc cacacttata tattatgtga ctgcactaaa 600

aacagacgct tttggtgc 618

<210> 107
<211> 538
<212> DNA
<213> Human

<400> 107
tttttttttt tttcaatttg gctatatttt aatttttaaa gaagggaaca tagagctatt 60

ttgagaaaaa taaagacatg aaaggatagc ccaagagagt ccagtaaaaa aagcagaggc 120

aaagttttcc ttggcttttg gttatgggct gtctgctgaa tatgagtctt ggatcttttt 180

cagcatcaac ttgcaaaagc tatgcctttc caccccttgcc cttgtagctt ttttgagtcc 240

aggtctcccc actcccatgc caatggaccc tttataatgg ggaaggcatc acagcaagac 300

gcaggcttgg ggctttccca atgaccaggt tctcattaag tgccatctca ccatcaacca 360

gcgacagcaa tgtccctttt gcccaagctc ctcctttccc tgcactctgg ttgccctcta 420

aatggcacca gcccaaacca gggacagtca ctcgtccact cacttcccaa atatttacag 480

agcgcctgtt gggtgccagg ctcctccagg ggccctgctg ccaggccgaa gcccacgg 538

<210> 108
<211> 542
<212> DNA
<213> Human

<400> 108
gaaaaaggaa tctgtatttt atttactcat tcatatttta gatccagaac caaagaaaag 60

caataaagtt ggtgaaagac tcatacaacc cacaatgttg cccccataaa aaatattcca 120

aattaatttc tggccacaaa ttctattttt acagcatgta attgaaacca gattaccttt 180

ggtttttcta agccaccccc tccacccсta gagagggggc taaaaagaat gtagtataag 240

tgaatcttga aagatatcct tggattctgc tgtctcaaat acagtttgct gcaaaaagtc 300

tttgccaact aaactatcat taccttcccc gatgctaagg ttgaaaatca gcatcttgat 360

tataagccta actttcaagt ttctaactca gctgcaaaat attttcccaa ctaaacctgt 420

ggtgttccaa aaatatatac tatacagcaa tttctaaagt tataaatgtc ttggcgcatt 480

tggcatactt gcttaattcc aaaatcatta aaaagacaca tttagtgaaa aagtatctca 540

ca 542

<210> 109
<211> 484
<212> DNA
<213> Human

<400> 109
cttatagctt ttcattatca tttgttagga gaattaagac aaaaattatc atgtgtgtca 60

caggaccaaa aaaagtgatt aaattttttg tttgtttgtt tatcttacca aattgtaaca 120

catgtagttt tcttctttct ctgtgttcta ttttattatt gtaaccactt tggtcttttt 180

ttttgtataa tcaattgcag ctagaatggt gtatggctct taatagatat tttggataat 240

gctgagtccc agaaatgtga agcctttccc gagtattgag ttcattaaag gttattatca 300

tcgtgtttaa tcagtaagtg attttaactt tcttcattat cccctcctct tgtttaactg 360

tggataagta gttcccatgg attgcttcct ctgtcttctt agcgagaaat atcggtggct 420

atgagatcat agctcaacag cttcaattct gtgctcttcc tctgagcaat ttttcttctt 480

ttca 484

<210> 110
<211> 478

<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (57)..(57)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (78)..(78)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (89)..(89)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (165)..(165)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (170)..(170)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (200)..(200)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (248)..(248)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (270)..(270)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (360)..(360)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (365)..(365)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (379)..(379)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (385)..(385)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (402)..(402)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (439)..(439)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (457)..(457)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (474)..(474)
<223> n is a, c, g, or t

<400> 110
tttttttgca ttatagtttt ataacttggg ggatggggca aaaaggaggg agaagtntaa 60

aaaacaaatg gagtgggnca caggaattnt cagaaatgga ggcttaggct gtccatacag 120

gattcagcaa gtacttgggg actgcgacta gaagaagcca gggtngggan taagtagctg 180

aggaggagag ggagctgatn tggaggagag caagggcaac ttcaaggaac aaaagggaag 240

ctgcaagnac cagctccatt aattcagcan acattccttg tctgtatgcc atgccagggt 300

ccttgttcta tggttctctc agtggggtag ctagaaactt gcccaacaga caggaacagn 360

cagangccaa agcaaagant tcctnaaagg tagccggcct gntgccaaac ctggggacaa 420

actttatgga ggcgccgtnt tttagccaga ccccgantta aaccttggtc ccancctg 478

<210> 111
<211> 313
<212> DNA
<213> Human

<400> 111
tttttttttt tttttttttt ttgaggttta tgctcatttt attataaaaa aatacagaat 60

ccaaagttga ttgtgacggg aagagggagg cccggtcgcc agctccaggc ctggcaacgc 120

ggcccgcccc gccgaccccc tacaaaagcc ctctgcccac cccccaccac cgggcgtgcc 180

tcgagccgcc ggccggcggt acaacaatat atatttatat ataatatata taaaacacag 240

agtcaggaaa ggcgggtaga aatatgaaat ccgtataaat gtgttgtttc cttcattaaa 300

gtgtcttcgg gga 313

<210> 112
<211> 498
<212> DNA
<213> Human

<400> 112
aacgtttttt tttttttttt tttttgggt gtatgtatat aaactttatt ttattctctt 60

ctggggttgt gttacatgac aagaaattga attaattcaa taaaatttta gttcgggttg 120

cttaggtttt tactgctccc attcttgctt ttactaattt atccaagatt agatgtgatt 180

actatttaat aataatttag tcctcacact tacaaaccac ttacaatacc agcatgcttc 240

tatcactgta attctattca attctcaggc ccatgaggca tgccagccag acgaccagac 300

agcatttatt gagtgcccac tctataccag ccacaaaaga tcctgtgtca gaaggggaaa 360

caggcttgga ggcttggagt atgtacgtga tagcctccct cccagtccac acaactggta 420

ctgctggggc tgtaactaga actcaggcct ctgcctctca agctcaaggt cggatgtcca 480

tgtgcttctc acgttgcc 498

<210> 113
<211> 590
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (450)..(450)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (515)..(515)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (547)..(547)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (558)..(558)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (570)..(570)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (581)..(581)
<223> n is a, c, g, or t

<400> 113
ttaatatttt aaaagcttat tgaatcacaa gcattttttt attttactgt aaaaacatca 60

tctttatcag ggagggggga aagtacaaaa ttatgtccct gatatgattc aaccatgtaa 120

aatgatgtac atttatgaac gacgactaga agtgaacatg aataactgaa aacaaacagt 180

gtgatgcaag tgaatttttg gagggtgaga tggtcattat attgttcttc gagcaattaa 240

atattttatt ttcttcccaa aacaatgtcc acaagggggc agacagaaga tgacaaataa 300

aaccatttaa taaaaacctc agctgaaaag ctaataactc cagaatgcag gttgaaagca 360

agcttaaagg tcatctaggc tggggtcagt agctcacgcc tgcaatccca acaccctggg 420

aggcccaggt gagaggaccg ctcgagcccn ggaggtaaag gccgcagcga gctatgaccg 480

cgccactgca caccagcctg tgccacaaag taganttcgt cccaaaaaaa aaaaatcctc 540

ctagtcntct agtccatntc ccccctggn caagaaggac ngaggcccca 590

<210> 114
<211> 365
<212> DNA
<213> Human

<400> 114
taaaattctt tggatttttt attggattca cataaagcaa agaacttact cacttggacc 60

gagaatatat tgtaatgttc cataagtcat aacttaagga ccgagaatat attgcaatgt 120

tccataagtc ataatttaat gtgcagtaag aacccatgaa gttgtctgac caaaagtaac 180

actcttctgt tgggaaagat tttacatcct tttattctgg atgaatcctg aattctagat 240

gttgggttta atgcttcaca caatggcaca tttacaagag gtacaaaaca cttattgagc 300

tttcagggcc actgtaaggg gcttgcagaa tagcctcttt gcaacccaga gaattaatct 360

gattc 365

<210> 115
<211> 539
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (359)..(359)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (481)..(481)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (483)..(483)
<223> n is a, c, g, or t

<400> 115
ttttttttt tttagttttt ggtgattatt taattgcaga agctattatg atataattac 60

ttctggtgga ttaagtgctg cttaaatact aagactatcc attcactttt gcctcacgcc 120

tctctactaa actgcagctc agttctgcct ctcataatat gtatgttgag taacattatg 180

accacacagt gctcatcaaa aactattgct ccagctgtaa ttttaaatgt tggaggtggt 240

tcaaaattct aaagagttat agaaataaca cacatttgac aaatacatat aaaaatagtt 300

ataacatatt gaaatcacat taaaatatga aaaacccaca aagcataatt gcatcatant 360

atttgtgttg ctagacactg tccatctatt tttagaaaac gtcttaaatg tcactcaatg 420

gggcaacttt cctggtttcc tatgtcttac cttagaagca agcagtgtgt tagaatggat 480

ntnccatgca cgttagaccc caagatacaa caagcttctc tatacagaag ccatccatg 539

<210> 116
<211> 602
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (294)..(294)
<223> n is a, c, g, or t

<400> 116
ttccagtgtt tgaaccatct ttatttaatg aattattgat atccttttt gtttccaaat 60

taaaacttca ccacatattt tcagctaagg taaatctgct tggtccaaac aaaacaaaac 120

aaaacaaaac accagactgc aacaataaca ggaaaagatc ctcttcagtg atttatgttg 180

ttctcttact ttcataacta gtttgaatgc aaggctggta aagggataca cagagaatca 240

ttattttaaa taacaaaagc cattcaaaac tctctctacc tgtcaaggat gttntatgct 300

cccattctta tttgtttggc agtaaacata ccttgcccac agtcgccagc atcaaaccca 360

caggacaaga cattgcatgc ttggtcacag aacttatcag cgagccagga attcgcacat 420

ccctgattac agtaagagac actgtttatt cctccaccaa actgccaggg ctgtccaact 480

ccaatactcc cagtacctcc acctcctgca atatagcgac tccctccact gtttccagag 540

caatccccac catcccaatc gcaggctgaa ttatttacag ccttgtcaca atagccatcc 600

tt 602

<210> 117
<211> 351
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (341)..(341)
<223> n is a, c, g, or t

<400> 117
tttttcggcc tcagtctgtt ctcagaacat actccatcac ctggttccca gaactcagat 60

tgcgcagtgg tctcgtcatc atcggccagg actcacagtg cccgcggcag aggcctccct 120

agacctccct cccgtccagc ctcacccgct gcctactctc ctcacgcccc tgctccaggt 180

cccctggccc catttcgctc gccacgtttt cataatcctc tcaggctccg ggcaagcggc 240

gccgcccgca atgggacctg atcatataag gaaaatactg cgggctcatc cgggggctgc 300

aatggtaacc cgaaagcgcc ctagcctact acaatcaccg naccccaact g 351

<210> 118
<211> 462
<212> DNA
<213> Human

<400> 118
gctaagaaat aacttttatt aaaaatactg tgctagtact tatgcaatta cataatttta 60

actaaatatt gtccactgcc acaattcgca ttaccaaact catattacca aattttaggc 120

cttgatagag cctaaatgct tcagtcactt cagaccaata acttaattct gttttcacat 180

accttataca ctggcctacc aatagctctc aattcctgtc aatactttcc ccattctgca 240

aaaagagggc cccatcccca tccctaatca aaaccaatgt gttgtacctg aaactgcaaa 300

gattaatgct tttcgatgac cactaacttt tgaagcccga aggcctaact tttagacaac 360

taaagctaca cactgttaaa attcttgggc ttctgtctta ttcagcaagc tgactcagta 420

aaattaatac actgtatgaa aaaagctaac atacctacaa tc 462

<210> 119
<211> 332
<212> DNA
<213> Human

<400> 119
ttttttttt ttttttttt ttttggttta aaaataaatt tattttatta catgataata 60

ttgacagttt acataaacaa agttatttag tgtatgcaaa gcaactataa aatacatttt 120

gaaaagatat aaaaatcttt gaaattcttt cttgatatca gatctaccaa atttcgagag 180

ccaccattga tattttagga tcaaaacaaa atggcttgag agattttgtt ggtcagccaa 240

actcagtcca ggaaaaaaga aacattaaag cattgttttg tgtttttaaa agctctaatg 300

gatatttatt ccaagctcct ttcgtatcga ag 332

<210> 120
<211> 473
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (373)..(373)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (429)..(429)
<223> n is a, c, g, or t

<400> 120
tttttttaa aatttcttcc agtttgggat tgtgtataca caaaaagctc aaaataaagc 60

aactctgcaa tataatctta aaataatggc tactggggga aattctatca caaccattga 120

aaataatggt gacttctcac ggagtctgtg gcatctgaga acccagttaa ttaaccaaag 180

tcttgctcat attagcctca gttacccaga ttaaagcagg aactccggcc ttccctggac 240

tgctgaaaac ccaacagatt ttctcaacat gctataagga aagagggaaa aattggtttc 300

agctcacacc tcatgggctg ggaagcttct gggaaggcct ccaggccagt ggcacactcc 360

ccaactttat ggntaaaagg aggggccaat tttcattccc cacaggcatt cacaaggagt 420

tcccacccnt ccaaccacac agtggttttg gacaccaagg ttcacccttt cct 473

<210> 121
<211> 525
<212> DNA
<213> Human

<400> 121
gagaggtgat ataatttatt tttcttttcc atccaaatta tcagtaacag tggctaaatg 60

gcaagatagg ctaaaaaact ctaagtgacc caattttaca aattaaagaa gtaagtaaac 120

attagaatga atacagttaa acaggagagg ctgggcacag tggctcacac ctgtaatccc 180

agtattatcc agtaaaagtt tagcaagcaa attcaaagaa gtctgttgtg caaccatagc 240

cctttgcagt agaatctgct atacagccta ttatgaggga tcaatttctt tctttcttct 300

tttttttttg agacagagtc ttgctctgtt gcccaacctg gaatgcagtg gggtgatctt 360

ggctcactgc aacctctgcc tcccaggttc aagcaattct cctgtctcag cctcccgagt 420

agctggatta caggtgtgca ccatcacacc cagctaattt ttgtattttt agtagagatg 480

gggtttcacc acattggtca ggctggtctc aaactcctga cctca 525

<210> 122
<211> 849
<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (598)..(598)
<223> n is a, c, g, or t

<400> 122
atatgtatat tttcctctga ttttatgact gatttacaaa ttaggagtgc aaatgggctg 60

ttccccgata gcatcttctg ggaagaatcc aaccaagata caaagcagat gatggtggat 120

cggcaaactc ttttctatga aaagaaaaac cagatatacc agggactgga aagcacctgc 180

ttgaaaattg atatgagcat gtctgaattt ttcccttata agagcctgag tattgtaaca 240

ggtctcttgc acaggggtt gaaaaataaa aaaagaagtt aacataatta aaatgcttgg 300

acaaaacatt tgctttatat agattcttac aagtaatatt tgattaggta tcaaaatagg 360

tttaggcagg tggaagttct gaatttcaag gcaaataagg catgaagggt ggaacattgc 420

atctagggaa aataagagaa ataagtgaaa gtctgaccct acattgccaa ttctcagacc 480

aagtacaaag tattaggaat tttttatatc agctgacatc tttgtgctta cagtaaagcc 540

atattagatg cacacatagt gactttatta aatcaaatga gtgtgcagag cagagcanat 600

ctaattaggc tttctctttt agagttttct tattttactc ttattagctc cctccagttg 660

gtcatcaatt tcctatccta catcagatat ttacactatc agattctttg gtttaaaatc 720

ctcttccggt ttacatttta atttctgggg cgctaaacac atacttctgt cccggtctta 780

tccctctatt ggaattcccc acagcgtggg caaaaacgcg ggctcgaaaa atgggggcc 840

ccttcccct 849

<210> 123
<211> 454

<212> DNA
<213> Human

<220>
<221> misc_feature
<222> (433)..(433)
<223> n is a, c, g, or t

<400> 123
ttgtgagcaa catcggctgt ttattcactt gtgtgtgagt gggctgagtc cgagaaaggg 60

gtcagcaaaa ggtggtggga ttatcattgg ttcttatagg tttgggatag gcggtgtagt 120

caggagcaat tttttacagg caggggatgg atattacaaa gtacattctc aagggtgggg 180

aggatgttac aaagtacatt cacaagggca gggagggtgt atcgtcacaa gggcagggag 240

gatgtattgt cacaagggtg gggaggaatg ttacaaagta cattcacaag gacaggagta 300

tcacaaagta cattatcaca agggtggggg aatgtcaccg tggcttgacc attagtgcag 360

ccagctccag aggaccttac caaaaagttt ccatacttgc acgtgttttc ctggtggcca 420

aaaatataaa acntttaatt tctgggattc cttt 454

<210> 124
<211> 485
<212> DNA
<213> Human

<400> 124
ttcagatttg acatgtcaat ctttatttaa gacaacaaaa gtttgtacac tctcatatta 60

agatatattt cctttctagt catattaaaa taatctcatt ttgttactca aaaagaatac 120

atagggaaga gaatgaacat aattcaagta gatagatttc taattggtta aaacagggtt 180

aaacaaatga tgttcaaaat atacttatta aagggaacag cacctagaaa taggcagtag 240

ggcaatgttc actttaagaa ttttatcaat aactagggca aagaacaaaa tcattatcaa 300

attttgaatt acacaaaagc aatggcctat taccttgtta acatttgata tttctatata 360

tcttcttctc tagttgaaat gggtaatgac ttgtattaca aggatgttac acattctaaa 420

atgatttaag ccaaaagatt atctttaata cattacttct agatataata tgtacttgat 480

gtctg 485

<210> 125
<211> 558
<212> DNA
<213> Human

<400> 125
ttttcagaca tgacagcatt tgacacactc ccttttaatt tattgcagaa ataatatgaa 60

catctgggaa aatgatagtg ctaaatatct cgtgaagtaa gtcattctta gaaagggatt 120

tgtgactttg aagtaatata taattagcaa gattttaaaa attattctta tgtactgaaa 180

ctcaaaacag actagcaaag tacctccaaa aaaaaaacta tcaaattaaa ctagaaaagt 240

atttccaaaa taaagacgac caaaaactag cctgagaata ctagttttct gttgctacaa 300

cacattacca caaacttagt ggcttaaaca caaatctatt atcttacagt tctgcagatt 360

agaggtccaa cacaggcttc actgggctaa aatcaaggtg ttggcagggc tgcgttcctt 420

ctgggaggct atggggaagt ttctgtttcc tttccagtct caattctacc ggctgcctgc 480

aactccctgg cttatggccc cttcctccat cttcaaagcc aggaatggtg catccctctc 540

taagcgttct ccctattt 558

<210> 126
<211> 508
<212> PRT
<213> Human

<400> 126

Met Gln Arg Leu Leu Thr Pro Val Lys Arg Ile Leu Gln Leu Thr Arg
1 5 10 15

Ala Val Gln Glu Thr Ser Leu Thr Pro Ala Arg Leu Leu Pro Val Ala
20 25 30

His Gln Arg Phe Ser Thr Ala Ser Ala Val Pro Leu Ala Lys Thr Asp
35 40 45

Thr Trp Pro Lys Asp Val Gly Ile Leu Ala Leu Glu Val Tyr Phe Pro
50 55 60

Ala Gln Tyr Val Asp Gln Thr Asp Leu Glu Lys Tyr Asn Asn Val Glu
65 70 75 80

Ala Gly Lys Tyr Thr Val Gly Leu Gly Gln Thr Arg Met Gly Phe Cys
85 90 95

Ser Val Gln Glu Asp Ile Asn Ser Leu Cys Leu Thr Val Val Gln Arg
100 105 110

Leu Met Glu Arg Ile Gln Leu Pro Trp Asp Ser Val Gly Arg Leu Glu
115 120 125

Val Gly Thr Glu Thr Ile Ile Asp Lys Ser Lys Ala Val Lys Thr Val
130 135 140

Leu Met Glu Leu Phe Gln Asp Ser Gly Asn Thr Asp Ile Glu Gly Ile
145 150 155 160

Asp Thr Thr Asn Ala Cys Tyr Gly Gly Thr Ala Ser Leu Phe Asn Ala
165 170 175

Ala Asn Trp Met Glu Ser Ser Ser Trp Asp Gly Arg Tyr Ala Met Val
180 185 190

Val Cys Gly Asp Ile Ala Val Tyr Pro Ser Gly Asn Ala Arg Pro Thr
195 200 205

Gly Gly Ala Gly Ala Val Ala Met Leu Ile Gly Pro Lys Ala Pro Leu
210 215 220

Ala Leu Glu Arg Gly Leu Arg Gly Thr His Met Glu Asn Val Tyr Asp
225 230 235 240

Phe Tyr Lys Pro Asn Leu Ala Ser Glu Tyr Pro Ile Val Asp Gly Lys
245 250 255

Leu Ser Ile Gln Cys Tyr Leu Arg Ala Leu Asp Arg Cys Tyr Thr Ser
260 265 270

Tyr Arg Lys Lys Ile Gln Asn Gln Trp Lys Gln Ala Gly Ser Asp Arg
275 280 285

Pro Phe Thr Leu Asp Asp Leu Gln Tyr Met Ile Phe His Thr Pro Phe
290 295 300

Cys Lys Met Val Gln Lys Ser Leu Ala Arg Leu Met Phe Asn Asp Phe
305 310 315 320

Leu Ser Ala Ser Ser Asp Thr Gln Thr Ser Leu Tyr Lys Gly Leu Glu
325 330 335

Ala Phe Gly Gly Leu Lys Leu Glu Asp Thr Tyr Thr Asn Lys Asp Leu
340 345 350

Asp Lys Ala Leu Leu Lys Ala Ser Gln Asp Met Phe Asp Lys Lys Thr
355 360 365

Lys Ala Ser Leu Tyr Leu Ser Thr His Asn Gly Asn Met Tyr Thr Ser
    370   375   380

Ser Leu Tyr Gly Cys Leu Ala Ser Leu Leu Ser His His Ser Ala Gln
385   390   395   400

Glu Leu Ala Gly Ser Arg Ile Gly Ala Phe Ser Tyr Gly Ser Gly Leu
                405   410   415

Ala Ala Ser Phe Phe Ser Phe Arg Val Ser Gln Asp Ala Ala Pro Gly
            420   425   430

Ser Pro Leu Asp Lys Leu Val Ser Ser Thr Ser Asp Leu Pro Lys Arg
        435   440   445

Leu Ala Ser Arg Lys Cys Val Ser Pro Glu Glu Phe Thr Glu Ile Met
    450   455   460

Asn Gln Arg Glu Gln Phe Tyr His Lys Val Asn Phe Ser Pro Pro Gly
465   470   475   480

Asp Thr Asn Ser Leu Phe Pro Gly Thr Trp Tyr Leu Glu Arg Val Asp
                485   490   495

Glu Gln His Arg Arg Lys Tyr Ala Arg Arg Pro Val
            500   505

<210> 127
<211> 396
<212> PRT
<213> Human

<400> 127

Met Val Ala Gly Thr Arg Cys Leu Leu Ala Leu Leu Leu Pro Gln Val
1   5   10   15

Leu Leu Gly Gly Ala Ala Gly Leu Val Pro Glu Leu Gly Arg Arg Lys
            20   25   30

Phe Ala Ala Ala Ser Ser Gly Arg Pro Ser Ser Gln Pro Ser Asp Glu
        35   40   45

Val Leu Ser Glu Phe Glu Leu Arg Leu Leu Ser Met Phe Gly Leu Lys
    50   55   60

Gln Arg Pro Thr Pro Ser Arg Asp Ala Val Val Pro Pro Tyr Met Leu
65 70 75 80

Asp Leu Tyr Arg Arg His Ser Gly Gln Pro Gly Ser Pro Ala Pro Asp
85 90 95

His Arg Leu Glu Arg Ala Ala Ser Arg Ala Asn Thr Val Arg Ser Phe
100 105 110

His His Glu Glu Ser Leu Glu Glu Leu Pro Glu Thr Ser Gly Lys Thr
115 120 125

Thr Arg Arg Phe Phe Phe Asn Leu Ser Ser Ile Pro Thr Glu Glu Phe
130 135 140

Ile Thr Ser Ala Glu Leu Gln Val Phe Arg Glu Gln Met Gln Asp Ala
145 150 155 160

Leu Gly Asn Asn Ser Ser Phe His His Arg Ile Asn Ile Tyr Glu Ile
165 170 175

Ile Lys Pro Ala Thr Ala Asn Ser Lys Phe Pro Val Thr Arg Leu Leu
180 185 190

Asp Thr Arg Leu Val Asn Gln Asn Ala Ser Arg Trp Glu Ser Phe Asp
195 200 205

Val Thr Pro Ala Val Met Arg Trp Thr Ala Gln Gly His Ala Asn His
210 215 220

Gly Phe Val Val Glu Val Ala His Leu Glu Glu Lys Gln Gly Val Ser
225 230 235 240

Lys Arg His Val Arg Ile Ser Arg Ser Leu His Gln Asp Glu His Ser
245 250 255

Trp Ser Gln Ile Arg Pro Leu Leu Val Thr Phe Gly His Asp Gly Lys
260 265 270

Gly His Pro Leu His Lys Arg Glu Lys Arg Gln Ala Lys His Lys Gln
275 280 285

Arg Lys Arg Leu Lys Ser Ser Cys Lys Arg His Pro Leu Tyr Val Asp
290 295 300

Phe Ser Asp Val Gly Trp Asn Asp Trp Ile Val Ala Pro Pro Gly Tyr
305 310 315 320

His Ala Phe Tyr Cys His Gly Glu Cys Pro Phe Pro Leu Ala Asp His
325 330 335

Leu Asn Ser Thr Asn His Ala Ile Val Gln Thr Leu Val Asn Ser Val
340 345 350

Asn Ser Lys Ile Pro Lys Ala Cys Cys Val Pro Thr Glu Leu Ser Ala
355 360 365

Ile Ser Met Leu Tyr Leu Asp Glu Asn Glu Lys Val Val Leu Lys Asn
370 375 380

Tyr Gln Asp Met Val Val Glu Gly Cys Gly Cys Arg
385 390 395

<210> 128
<211> 219
<212> PRT
<213> Human

<400> 128

Met Ala Asp Lys Ala Lys Pro Ala Lys Ala Ala Asn Arg Thr Pro Pro
1 5 10 15

Lys Ser Pro Gly Asp Pro Ser Lys Asp Arg Ala Ala Lys Arg Leu Ser
20 25 30

Leu Glu Ser Glu Gly Ala Gly Glu Gly Ala Ala Ala Ser Pro Glu Leu
35 40 45

Ser Ala Leu Glu Glu Ala Phe Arg Arg Phe Ala Val His Gly Asp Ala
50 55 60

Arg Ala Thr Gly Arg Glu Met His Gly Lys Asn Trp Ser Lys Leu Cys
65 70 75 80

Lys Asp Cys Gln Val Ile Asp Gly Arg Asn Val Thr Val Thr Asp Val
85 90 95

Asp Ile Val Phe Ser Lys Ile Lys Gly Lys Ser Cys Arg Thr Ile Thr
100 105 110

Phe Glu Gln Phe Gln Glu Ala Leu Glu Glu Leu Ala Lys Lys Arg Phe
115 120 125

Lys Asp Lys Ser Ser Glu Glu Ala Val Arg Glu Val His Arg Leu Ile
130 135 140

Glu Gly Lys Ala Pro Ile Ile Ser Gly Val Thr Lys Ala Ile Ser Ser
145 150 155 160

Pro Thr Val Ser Arg Leu Thr Asp Thr Thr Lys Phe Thr Gly Ser His
165 170 175

Lys Glu Arg Phe Asp Pro Ser Gly Lys Gly Lys Gly Lys Ala Gly Arg
180 185 190

Val Asp Leu Val Asp Glu Ser Gly Tyr Val Ser Gly Tyr Lys His Ala
195 200 205

Gly Thr Tyr Asp Gln Lys Val Gln Gly Gly Lys
210 215

<210> 129
<211> 384
<212> PRT
<213> Human

<400> 129

Met Asp Cys Ser Asn Gly Ser Ala Glu Cys Thr Gly Glu Gly Gly Ser
1 5 10 15

Lys Glu Val Val Gly Thr Phe Lys Ala Lys Asp Leu Ile Val Thr Pro
20 25 30

Ala Thr Ile Leu Lys Glu Lys Pro Asp Pro Asn Asn Leu Val Phe Gly
35 40 45

Thr Val Phe Thr Asp His Met Leu Thr Val Glu Trp Ser Ser Glu Phe
50 55 60

Gly Trp Glu Lys Pro His Ile Lys Pro Leu Gln Asn Leu Ser Leu His
65 70 75 80

Pro Gly Ser Ser Ala Leu His Tyr Ala Val Glu Leu Phe Glu Gly Leu
85 90 95

Lys Ala Phe Arg Gly Val Asp Asn Lys Ile Arg Leu Phe Gln Pro Asn
100 105 110

Leu Asn Met Asp Arg Met Tyr Arg Ser Ala Val Arg Ala Thr Leu Pro
115 120 125

Val Phe Asp Lys Glu Glu Leu Leu Glu Cys Ile Gln Gln Leu Val Lys
130 135 140

Leu Asp Gln Glu Trp Val Pro Tyr Ser Thr Ser Ala Ser Leu Tyr Ile
145 150 155 160

Arg Pro Ala Phe Ile Gly Thr Glu Pro Ser Leu Gly Val Lys Lys Pro
165 170 175

Thr Lys Ala Leu Leu Phe Val Leu Leu Ser Pro Val Gly Pro Tyr Phe
180 185 190

Ser Ser Gly Thr Phe Asn Pro Val Ser Leu Trp Ala Asn Pro Lys Tyr
195 200 205

Val Arg Ala Trp Lys Gly Gly Thr Gly Asp Cys Lys Met Gly Gly Asn
210 215 220

Tyr Gly Ser Ser Leu Phe Ala Gln Cys Glu Asp Val Asp Asn Gly Cys
225 230 235 240

Gln Gln Val Leu Trp Leu Tyr Gly Arg Asp His Gln Ile Thr Glu Val
245 250 255

Gly Thr Met Asn Leu Phe Leu Tyr Trp Ile Asn Glu Asp Gly Glu Glu
260 265 270

Glu Leu Ala Thr Pro Pro Leu Asp Gly Ile Ile Leu Pro Gly Val Thr
275 280 285

Arg Arg Cys Ile Leu Asp Leu Ala His Gln Trp Gly Glu Phe Lys Val
290 295 300

Ser Glu Arg Tyr Leu Thr Met Asp Asp Leu Thr Thr Ala Leu Glu Gly
305 310 315 320

Asn Arg Val Arg Glu Met Phe Ser Ser Gly Thr Ala Cys Val Val Cys

325 330 335

Pro Val Ser Asp Ile Leu Tyr Lys Gly Glu Thr Ile His Ile Pro Thr
340 345 350

Met Glu Asn Gly Pro Lys Leu Ala Ser Arg Ile Leu Ser Lys Leu Thr
355 360 365

Asp Ile Gln Tyr Gly Arg Glu Glu Ser Asp Trp Thr Ile Val Leu Ser
370 375 380

<210> 130
<211> 158
<212> PRT
<213> Human

<400> 130

Met Ser His Gly Lys Gly Thr Asp Met Leu Pro Glu Ile Ala Ala Ala
1 5 10 15

Val Gly Phe Leu Ser Ser Leu Leu Arg Thr Arg Gly Cys Val Ser Glu
20 25 30

Gln Arg Leu Lys Val Phe Ser Gly Ala Leu Gln Glu Ala Leu Thr Glu
35 40 45

His Tyr Lys His His Trp Phe Pro Glu Lys Pro Ser Lys Gly Ser Gly
50 55 60

Tyr Arg Cys Ile Arg Ile Asn His Lys Met Asp Pro Ile Ile Ser Arg
65 70 75 80

Val Ala Ser Gln Ile Gly Leu Ser Gln Pro Gln Leu His Gln Leu Leu
85 90 95

Pro Ser Glu Leu Thr Leu Trp Val Asp Pro Tyr Glu Val Ser Tyr Arg
100 105 110

Ile Gly Glu Asp Gly Ser Ile Cys Val Leu Tyr Glu Glu Ala Pro Leu
115 120 125

Ala Ala Ser Cys Gly Leu Leu Thr Cys Lys Asn Gln Val Leu Leu Gly
130 135 140

Arg Ser Ser Pro Ser Lys Asn Tyr Val Met Ala Val Ser Ser

145 150 155

<210> 131
<211> 344
<212> PRT
<213> Human

<400> 131

Met Gly Pro Pro Ser Ala Pro Pro Cys Arg Leu His Val Pro Trp Lys
1 5 10 15

Glu Val Leu Leu Thr Ala Ser Leu Leu Thr Phe Trp Asn Pro Pro Thr
20 25 30

Thr Ala Lys Leu Thr Ile Glu Ser Thr Pro Phe Asn Val Ala Glu Gly
35 40 45

Lys Glu Val Leu Leu Leu Ala His Asn Leu Pro Gln Asn Arg Ile Gly
50 55 60

Tyr Ser Trp Tyr Lys Gly Glu Arg Val Asp Gly Asn Ser Leu Ile Val
65 70 75 80

Gly Tyr Val Ile Gly Thr Gln Gln Ala Thr Pro Gly Pro Ala Tyr Ser
85 90 95

Gly Arg Glu Thr Ile Tyr Pro Asn Ala Ser Leu Leu Ile Gln Asn Val
100 105 110

Thr Gln Asn Asp Thr Gly Phe Tyr Thr Leu Gln Val Ile Lys Ser Asp
115 120 125

Leu Val Asn Glu Glu Ala Thr Gly Gln Phe His Val Tyr Pro Glu Leu
130 135 140

Pro Lys Pro Ser Ile Ser Ser Asn Asn Ser Asn Pro Val Glu Asp Lys
145 150 155 160

Asp Ala Val Ala Phe Thr Cys Glu Pro Glu Val Gln Asn Thr Thr Tyr
165 170 175

Leu Trp Trp Val Asn Gly Gln Ser Leu Pro Val Ser Pro Arg Leu Gln
180 185 190

Leu Ser Asn Gly Asn Met Thr Leu Thr Leu Leu Ser Val Lys Arg Asn

195 200 205

Asp Ala Gly Ser Tyr Glu Cys Glu Ile Gln Asn Pro Ala Ser Ala Asn
210 215 220

Arg Ser Asp Pro Val Thr Leu Asn Val Leu Tyr Gly Pro Asp Val Pro
225 230 235 240

Thr Ile Ser Pro Ser Lys Ala Asn Tyr Arg Pro Gly Glu Asn Leu Asn
245 250 255

Leu Ser Cys His Ala Ala Ser Asn Pro Pro Ala Gln Tyr Ser Trp Phe
260 265 270

Ile Asn Gly Thr Phe Gln Gln Ser Thr Gln Glu Leu Phe Ile Pro Asn
275 280 285

Ile Thr Val Asn Asn Ser Gly Ser Tyr Met Cys Gln Ala His Asn Ser
290 295 300

Ala Thr Gly Leu Asn Arg Thr Thr Val Thr Met Ile Thr Val Ser Gly
305 310 315 320

Ser Ala Pro Val Leu Ser Ala Val Ala Thr Val Gly Ile Thr Ile Gly
325 330 335

Val Leu Ala Arg Val Ala Leu Ile
340

<210> 132
<211> 479
<212> PRT
<213> Human

<400> 132

Met Lys Ser Gln Gly Gln His Trp Tyr Ser Ser Ser Asp Lys Asn Cys
1 5 10 15

Lys Val Ser Phe Arg Glu Lys Leu Leu Ile Ile Asp Ser Asn Leu Gly
20 25 30

Val Gln Asp Val Glu Asn Leu Lys Phe Leu Cys Ile Gly Leu Val Pro
35 40 45

Asn Lys Lys Leu Glu Lys Ser Ser Ser Ala Ser Asp Val Phe Glu His

50 55 60

Leu Leu Ala Glu Asp Leu Leu Ser Glu Glu Asp Pro Phe Phe Leu Ala
65 70 75 80

Glu Leu Leu Tyr Ile Ile Arg Gln Lys Lys Leu Leu Gln His Leu Asn
85 90 95

Cys Thr Lys Glu Glu Val Glu Arg Leu Leu Pro Thr Arg Gln Arg Val
100 105 110

Ser Leu Phe Arg Asn Leu Leu Tyr Glu Leu Ser Glu Gly Ile Asp Ser
115 120 125

Glu Asn Leu Lys Asp Met Ile Phe Leu Leu Lys Asp Ser Leu Pro Lys
130 135 140

Thr Glu Met Thr Ser Leu Ser Phe Leu Ala Phe Leu Glu Lys Gln Gly
145 150 155 160

Lys Ile Asp Glu Asp Asn Leu Thr Cys Leu Glu Asp Leu Cys Lys Thr
165 170 175

Val Val Pro Lys Leu Leu Arg Asn Ile Glu Lys Tyr Lys Arg Glu Lys
180 185 190

Ala Ile Gln Ile Val Thr Pro Pro Val Asp Lys Glu Ala Glu Ser Tyr
195 200 205

Gln Gly Glu Glu Glu Leu Val Ser Gln Thr Asp Val Lys Thr Phe Leu
210 215 220

Glu Ala Leu Pro Arg Ala Ala Val Tyr Arg Met Asn Arg Asn His Arg
225 230 235 240

Gly Leu Cys Val Ile Val Asn Asn His Ser Phe Thr Ser Leu Lys Asp
245 250 255

Arg Gln Gly Thr His Lys Asp Ala Glu Ile Leu Ser His Val Phe Gln
260 265 270

Trp Leu Gly Phe Thr Val His Ile His Asn Asn Val Thr Lys Val Glu
275 280 285

Met Glu Met Val Leu Gln Lys Gln Lys Cys Asn Pro Ala His Ala Asp
290 295 300

Gly Asp Cys Phe Val Phe Cys Ile Leu Thr His Gly Arg Phe Gly Ala
305 310 315 320

Val Tyr Ser Ser Asp Glu Ala Leu Ile Pro Ile Arg Glu Ile Met Ser
325 330 335

His Phe Thr Ala Leu Gln Cys Pro Arg Leu Ala Glu Lys Pro Lys Leu
340 345 350

Phe Phe Ile Gln Ala Cys Gln Gly Glu Glu Ile Gln Pro Ser Val Ser
355 360 365

Ile Glu Ala Asp Ala Leu Asn Pro Glu Gln Ala Pro Thr Ser Leu Gln
370 375 380

Asp Ser Ile Pro Ala Glu Ala Asp Phe Leu Leu Gly Leu Ala Thr Val
385 390 395 400

Pro Gly Tyr Val Ser Phe Arg His Val Glu Glu Gly Ser Trp Tyr Ile
405 410 415

Gln Ser Leu Cys Asn His Leu Lys Lys Leu Val Pro Arg His Glu Asp
420 425 430

Ile Leu Ser Ile Leu Thr Ala Val Asn Asp Asp Val Ser Arg Arg Val
435 440 445

Asp Lys Gln Gly Thr Lys Lys Gln Met Pro Gln Pro Ala Phe Thr Leu
450 455 460

Arg Lys Lys Leu Val Phe Pro Val Pro Leu Asp Ala Leu Ser Ile
465 470 475

<210> 133
<211> 509
<212> PRT
<213> Human

<400> 133

Met Thr Val Glu Gly Arg Leu Leu Val Pro Asp Arg Ile Asn Gly Thr
1 5 10 15

Ala Asn Lys Met Asn Gly Ala Leu Asp His Ser Asp Gln Pro Asp Pro
20 25 30

Asp Ala Ile Lys Met Phe Val Gly Gln Ile Pro Arg Ser Trp Ser Glu
35 40 45

Lys Glu Leu Lys Glu Leu Phe Glu Pro Tyr Gly Ala Val Tyr Gln Ile
50 55 60

Asn Val Leu Arg Asp Arg Ser Gln Asn Pro Pro Gln Ser Lys Gly Cys
65 70 75 80

Cys Phe Val Thr Phe Tyr Thr Arg Lys Ala Ala Leu Glu Ala Gln Asn
85 90 95

Ala Leu His Asn Ile Lys Thr Leu Pro Gly Met His His Pro Ile Gln
100 105 110

Met Lys Pro Ala Asp Ser Glu Lys Ser Asn Ala Val Glu Asp Arg Lys
115 120 125

Leu Phe Ile Gly Met Val Ser Lys Lys Cys Asn Glu Asn Asp Ile Arg
130 135 140

Val Met Phe Ser Pro Phe Gly Gln Ile Glu Glu Cys Arg Ile Leu Arg
145 150 155 160

Gly Pro Asp Gly Leu Ser Arg Gly Cys Ala Phe Val Thr Phe Ser Thr
165 170 175

Arg Ala Met Ala Gln Asn Ala Ile Lys Ala Met His Gln Ser Gln Thr
180 185 190

Met Glu Gly Cys Ser Ser Pro Ile Val Val Lys Phe Ala Asp Thr Gln
195 200 205

Lys Asp Lys Glu Gln Arg Arg Leu Gln Gln Gln Leu Ala Gln Gln Met
210 215 220

Gln Gln Leu Asn Thr Ala Thr Trp Gly Asn Leu Thr Gly Leu Gly Gly
225 230 235 240

Leu Thr Pro Gln Tyr Leu Ala Leu Leu Gln Gln Ala Thr Ser Ser Ser
245 250 255

Asn Leu Gly Ala Phe Ser Gly Ile Gln Gln Met Ala Gly Met Asn Ala
260 265 270

Leu Gln Leu Gln Asn Leu Ala Thr Leu Ala Ala Ala Ala Ala Ala Ala
275 280 285

Gln Thr Ser Ala Thr Ser Thr Asn Ala Asn Pro Leu Ser Thr Thr Ser
290 295 300

Ser Ala Leu Gly Ala Leu Thr Ser Pro Val Ala Ala Ser Thr Pro Asn
305 310 315 320

Ser Thr Ala Gly Ala Ala Met Asn Ser Leu Thr Ser Leu Gly Thr Leu
325 330 335

Gln Gly Leu Ala Gly Ala Thr Val Gly Leu Asn Asn Ile Asn Ala Leu
340 345 350

Ala Val Ala Gln Met Leu Ser Gly Met Ala Ala Leu Asn Gly Gly Leu
355 360 365

Gly Ala Thr Gly Leu Thr Asn Gly Thr Ala Gly Thr Met Asp Ala Leu
370 375 380

Thr Gln Ala Tyr Ser Gly Ile Gln Gln Tyr Ala Ala Ala Ala Leu Pro
385 390 395 400

Thr Leu Tyr Ser Gln Ser Leu Leu Gln Gln Gln Ser Ala Ala Gly Ser
405 410 415

Gln Lys Glu Gly Pro Glu Gly Ala Asn Leu Phe Ile Tyr His Leu Pro
420 425 430

Gln Glu Phe Gly Asp Gln His Ile Leu Gln Met Phe Met Pro Phe Gly
435 440 445

Asn Val Ile Ser Ala Lys Val Phe Ile Asp Lys Gln Thr Asn Leu Ser
450 455 460

Lys Cys Phe Gly Phe Val Ser Tyr Asp Asn Pro Val Ser Ala Gln Ala
465 470 475 480

Ala Ile Gln Ala Met Asn Gly Phe Gln Ile Gly Met Lys Arg Leu Lys
485 490 495

Val Gln Leu Lys Arg Ser Lys Asn Asp Ser Lys Pro Tyr
500 505

<210> 134
<211> 141
<212> PRT
<213> Human

<400> 134

Met Ala Arg Pro Leu Cys Thr Leu Leu Leu Leu Met Ala Thr Leu Ala
1 5 10 15

Gly Ala Leu Ala Ser Ser Ser Lys Glu Glu Asn Arg Ile Ile Pro Gly
20 25 30

Gly Ile Tyr Asp Ala Asp Leu Asn Asp Glu Trp Val Gln Arg Ala Leu
35 40 45

His Phe Ala Ile Ser Glu Tyr Asn Lys Ala Thr Glu Asp Glu Tyr Tyr
50 55 60

Arg Arg Pro Leu Gln Val Leu Arg Ala Arg Glu Gln Thr Phe Gly Gly
65 70 75 80

Val Asn Tyr Phe Phe Asp Val Glu Val Gly Arg Thr Ile Cys Thr Lys
85 90 95

Ser Gln Pro Asn Leu Asp Thr Cys Ala Phe His Glu Gln Pro Glu Leu
100 105 110

Gln Lys Lys Gln Leu Cys Ser Phe Glu Ile Tyr Glu Val Pro Trp Glu
115 120 125

Asp Arg Met Ser Leu Val Asn Ser Arg Cys Gln Glu Ala
130 135 140

<210> 135
<211> 1480
<212> PRT
<213> Human

<400> 135

Met Gln Arg Ser Pro Leu Glu Lys Ala Ser Val Val Ser Lys Leu Phe
1 5 10 15

Phe Ser Trp Thr Arg Pro Ile Leu Arg Lys Gly Tyr Arg Gln Arg Leu
20 25 30

Glu Leu Ser Asp Ile Tyr Gln Ile Pro Ser Val Asp Ser Ala Asp Asn
35 40 45

Leu Ser Glu Lys Leu Glu Arg Glu Trp Asp Arg Glu Leu Ala Ser Lys
50 55 60

Lys Asn Pro Lys Leu Ile Asn Ala Leu Arg Arg Cys Phe Phe Trp Arg
65 70 75 80

Phe Met Phe Tyr Gly Ile Phe Leu Tyr Leu Gly Glu Val Thr Lys Ala
85 90 95

Val Gln Pro Leu Leu Leu Gly Arg Ile Ile Ala Ser Tyr Asp Pro Asp
100 105 110

Asn Lys Glu Glu Arg Ser Ile Ala Ile Tyr Leu Gly Ile Gly Leu Cys
115 120 125

Leu Leu Phe Ile Val Arg Thr Leu Leu Leu His Pro Ala Ile Phe Gly
130 135 140

Leu His His Ile Gly Met Gln Met Arg Ile Ala Met Phe Ser Leu Ile
145 150 155 160

Tyr Lys Lys Thr Leu Lys Leu Ser Ser Arg Val Leu Asp Lys Ile Ser
165 170 175

Ile Gly Gln Leu Val Ser Leu Leu Ser Asn Asn Leu Asn Lys Phe Asp
180 185 190

Glu Gly Leu Ala Leu Ala His Phe Val Trp Ile Ala Pro Leu Gln Val
195 200 205

Ala Leu Leu Met Gly Leu Ile Trp Glu Leu Leu Gln Ala Ser Ala Phe
210 215 220

Cys Gly Leu Gly Phe Leu Ile Val Leu Ala Leu Phe Gln Ala Gly Leu
225 230 235 240

Gly Arg Met Met Met Lys Tyr Arg Asp Gln Arg Ala Gly Lys Ile Ser
245 250 255

```
Glu Arg Leu Val Ile Thr Ser Glu Met Ile Glu Asn Ile Gln Ser Val
            260                 265                 270

Lys Ala Tyr Cys Trp Glu Glu Ala Met Glu Lys Met Ile Glu Asn Leu
        275                 280                 285

Arg Gln Thr Glu Leu Lys Leu Thr Arg Lys Ala Ala Tyr Val Arg Tyr
    290                 295                 300

Phe Asn Ser Ser Ala Phe Phe Phe Ser Gly Phe Phe Val Val Phe Leu
305                 310                 315                 320

Ser Val Leu Pro Tyr Ala Leu Ile Lys Gly Ile Ile Leu Arg Lys Ile
                325                 330                 335

Phe Thr Thr Ile Ser Phe Cys Ile Val Leu Arg Met Ala Val Thr Arg
            340                 345                 350

Gln Phe Pro Trp Ala Val Gln Thr Trp Tyr Asp Ser Leu Gly Ala Ile
        355                 360                 365

Asn Lys Ile Gln Asp Phe Leu Gln Lys Gln Glu Tyr Lys Thr Leu Glu
    370                 375                 380

Tyr Asn Leu Thr Thr Thr Glu Val Val Met Glu Asn Val Thr Ala Phe
385                 390                 395                 400

Trp Glu Glu Gly Phe Gly Glu Leu Phe Glu Lys Ala Lys Gln Asn Asn
                405                 410                 415

Asn Asn Arg Lys Thr Ser Asn Gly Asp Asp Ser Leu Phe Phe Ser Asn
            420                 425                 430

Phe Ser Leu Leu Gly Thr Pro Val Leu Lys Asp Ile Asn Phe Lys Ile
        435                 440                 445

Glu Arg Gly Gln Leu Leu Ala Val Ala Gly Ser Thr Gly Ala Gly Lys
    450                 455                 460

Thr Ser Leu Leu Met Met Ile Met Gly Glu Leu Glu Pro Ser Glu Gly
465                 470                 475                 480

Lys Ile Lys His Ser Gly Arg Ile Ser Phe Cys Ser Gln Phe Ser Trp
```

485 490 495

Ile Met Pro Gly Thr Ile Lys Glu Asn Ile Ile Phe Gly Val Ser Tyr
500 505 510

Asp Glu Tyr Arg Tyr Arg Ser Val Ile Lys Ala Cys Gln Leu Glu Glu
515 520 525

Asp Ile Ser Lys Phe Ala Glu Lys Asp Asn Ile Val Leu Gly Glu Gly
530 535 540

Gly Ile Thr Leu Ser Gly Gly Gln Arg Ala Arg Ile Ser Leu Ala Arg
545 550 555 560

Ala Val Tyr Lys Asp Ala Asp Leu Tyr Leu Leu Asp Ser Pro Phe Gly
565 570 575

Tyr Leu Asp Val Leu Thr Glu Lys Glu Ile Phe Glu Ser Cys Val Cys
580 585 590

Lys Leu Met Ala Asn Lys Thr Arg Ile Leu Val Thr Ser Lys Met Glu
595 600 605

His Leu Lys Lys Ala Asp Lys Ile Leu Ile Leu Asn Glu Gly Ser Ser
610 615 620

Tyr Phe Tyr Gly Thr Phe Ser Glu Leu Gln Asn Leu Gln Pro Asp Phe
625 630 635 640

Ser Ser Lys Leu Met Gly Cys Asp Ser Phe Asp Gln Phe Ser Ala Glu
645 650 655

Arg Arg Asn Ser Ile Leu Thr Glu Thr Leu His Arg Phe Ser Leu Glu
660 665 670

Gly Asp Ala Pro Val Ser Trp Thr Glu Thr Lys Lys Gln Ser Phe Lys
675 680 685

Gln Thr Gly Glu Phe Gly Glu Lys Arg Lys Asn Ser Ile Leu Asn Pro
690 695 700

Ile Asn Ser Ile Arg Lys Phe Ser Ile Val Gln Lys Thr Pro Leu Gln
705 710 715 720

Met Asn Gly Ile Glu Glu Asp Ser Asp Glu Pro Leu Glu Arg Arg Leu
725 730 735

Ser Leu Val Pro Asp Ser Glu Gln Gly Glu Ala Ile Leu Pro Arg Ile
740 745 750

Ser Val Ile Ser Thr Gly Pro Thr Leu Gln Ala Arg Arg Arg Gln Ser
755 760 765

Val Leu Asn Leu Met Thr His Ser Val Asn Gln Gly Gln Asn Ile His
770 775 780

Arg Lys Thr Thr Ala Ser Thr Arg Lys Val Ser Leu Ala Pro Gln Ala
785 790 795 800

Asn Leu Thr Glu Leu Asp Ile Tyr Ser Arg Arg Leu Ser Gln Glu Thr
805 810 815

Gly Leu Glu Ile Ser Glu Glu Ile Asn Glu Glu Asp Leu Lys Glu Cys
820 825 830

Leu Phe Asp Asp Met Glu Ser Ile Pro Ala Val Thr Thr Trp Asn Thr
835 840 845

Tyr Leu Arg Tyr Ile Thr Val His Lys Ser Leu Ile Phe Val Leu Ile
850 855 860

Trp Cys Leu Val Ile Phe Leu Ala Glu Val Ala Ala Ser Leu Val Val
865 870 875 880

Leu Trp Leu Leu Gly Asn Thr Pro Leu Gln Asp Lys Gly Asn Ser Thr
885 890 895

His Ser Arg Asn Asn Ser Tyr Ala Val Ile Ile Thr Ser Thr Ser Ser
900 905 910

Tyr Tyr Val Phe Tyr Ile Tyr Val Gly Val Ala Asp Thr Leu Leu Ala
915 920 925

Met Gly Phe Phe Arg Gly Leu Pro Leu Val His Thr Leu Ile Thr Val
930 935 940

Ser Lys Ile Leu His His Lys Met Leu His Ser Val Leu Gln Ala Pro
945 950 955 960

Met Ser Thr Leu Asn Thr Leu Lys Ala Gly Gly Ile Leu Asn Arg Phe
965 970 975

Ser Lys Asp Ile Ala Ile Leu Asp Asp Leu Leu Pro Leu Thr Ile Phe
980 985 990

Asp Phe Ile Gln Leu Leu Leu Ile Val Ile Gly Ala Ile Ala Val Val
995 1000 1005

Ala Val Leu Gln Pro Tyr Ile Phe Val Ala Thr Val Pro Val Ile
1010 1015 1020

Val Ala Phe Ile Met Leu Arg Ala Tyr Phe Leu Gln Thr Ser Gln
1025 1030 1035

Gln Leu Lys Gln Leu Glu Ser Glu Gly Arg Ser Pro Ile Phe Thr
1040 1045 1050

His Leu Val Thr Ser Leu Lys Gly Leu Trp Thr Leu Arg Ala Phe
1055 1060 1065

Gly Arg Gln Pro Tyr Phe Glu Thr Leu Phe His Lys Ala Leu Asn
1070 1075 1080

Leu His Thr Ala Asn Trp Phe Leu Tyr Leu Ser Thr Leu Arg Trp
1085 1090 1095

Phe Gln Met Arg Ile Glu Met Ile Phe Val Ile Phe Phe Ile Ala
1100 1105 1110

Val Thr Phe Ile Ser Ile Leu Thr Thr Gly Glu Gly Glu Gly Arg
1115 1120 1125

Val Gly Ile Ile Leu Thr Leu Ala Met Asn Ile Met Ser Thr Leu
1130 1135 1140

Gln Trp Ala Val Asn Ser Ser Ile Asp Val Asp Ser Leu Met Arg
1145 1150 1155

Ser Val Ser Arg Val Phe Lys Phe Ile Asp Met Pro Thr Glu Gly
1160 1165 1170

Lys Pro Thr Lys Ser Thr Lys Pro Tyr Lys Asn Gly Gln Leu Ser
1175 1180 1185

Lys Val Met Ile Ile Glu Asn Ser His Val Lys Lys Asp Asp Ile
1190 1195 1200

Trp Pro Ser Gly Gly Gln Met Thr Val Lys Asp Leu Thr Ala Lys
1205 1210 1215

Tyr Thr Glu Gly Gly Asn Ala Ile Leu Glu Asn Ile Ser Phe Ser
1220 1225 1230

Ile Ser Pro Gly Gln Arg Val Gly Leu Leu Gly Arg Thr Gly Ser
1235 1240 1245

Gly Lys Ser Thr Leu Leu Ser Ala Phe Leu Arg Leu Leu Asn Thr
1250 1255 1260

Glu Gly Glu Ile Gln Ile Asp Gly Val Ser Trp Asp Ser Ile Thr
1265 1270 1275

Leu Gln Gln Trp Arg Lys Ala Phe Gly Val Ile Pro Gln Lys Val
1280 1285 1290

Phe Ile Phe Ser Gly Thr Phe Arg Lys Asn Leu Asp Pro Tyr Glu
1295 1300 1305

Gln Trp Ser Asp Gln Glu Ile Trp Lys Val Ala Asp Glu Val Gly
1310 1315 1320

Leu Arg Ser Val Ile Glu Gln Phe Pro Gly Lys Leu Asp Phe Val
1325 1330 1335

Leu Val Asp Gly Gly Cys Val Leu Ser His Gly His Lys Gln Leu
1340 1345 1350

Met Cys Leu Ala Arg Ser Val Leu Ser Lys Ala Lys Ile Leu Leu
1355 1360 1365

Leu Asp Glu Pro Ser Ala His Leu Asp Pro Val Thr Tyr Gln Ile
1370 1375 1380

Ile Arg Arg Thr Leu Lys Gln Ala Phe Ala Asp Cys Thr Val Ile
1385 1390 1395

Leu Cys Glu His Arg Ile Glu Ala Met Leu Glu Cys Gln Gln Phe

1400 1405 1410

Leu Val Ile Glu Glu Asn Lys Val Arg Gln Tyr Asp Ser Ile Gln
1415 1420 1425

Lys Leu Leu Asn Glu Arg Ser Leu Phe Arg Gln Ala Ile Ser Pro
1430 1435 1440

Ser Asp Arg Val Lys Leu Phe Pro His Arg Asn Ser Ser Lys Cys
1445 1450 1455

Lys Ser Lys Pro Gln Ile Ala Ala Leu Lys Glu Glu Thr Glu Glu
1460 1465 1470

Glu Val Gln Asp Thr Arg Leu
1475 1480

<210> 136
<211> 502
<212> PRT
<213> Human

<400> 136

Met Leu Ala Ala Met Gly Ser Leu Ala Ala Ala Leu Trp Ala Val Val
1 5 10 15

His Pro Arg Thr Leu Leu Leu Gly Thr Val Ala Phe Leu Leu Ala Ala
20 25 30

Asp Phe Leu Lys Arg Arg Arg Pro Lys Asn Tyr Pro Pro Gly Pro Trp
35 40 45

Arg Leu Pro Phe Leu Gly Asn Phe Phe Leu Val Asp Phe Glu Gln Ser
50 55 60

His Leu Glu Val Gln Leu Phe Val Lys Lys Tyr Gly Asn Leu Phe Ser
65 70 75 80

Leu Glu Leu Gly Asp Ile Ser Ala Val Leu Ile Thr Gly Leu Pro Leu
85 90 95

Ile Lys Glu Ala Leu Ile His Met Asp Gln Asn Phe Gly Asn Arg Pro
100 105 110

Val Thr Pro Met Arg Glu His Ile Phe Lys Lys Asn Gly Leu Ile Met

115 120 125

Ser Ser Gly Gln Ala Trp Lys Glu Gln Arg Arg Phe Thr Leu Thr Ala
130 135 140

Leu Arg Asn Phe Gly Leu Gly Lys Lys Ser Leu Glu Glu Arg Ile Gln
145 150 155 160

Glu Glu Ala Gln His Leu Thr Glu Ala Ile Lys Glu Glu Asn Gly Gln
165 170 175

Pro Phe Asp Pro His Phe Lys Ile Asn Asn Ala Val Ser Asn Ile Ile
180 185 190

Cys Ser Ile Thr Phe Gly Glu Arg Phe Glu Tyr Gln Asp Ser Trp Phe
195 200 205

Gln Gln Leu Leu Lys Leu Leu Asp Glu Val Thr Tyr Leu Glu Ala Ser
210 215 220

Lys Thr Cys Gln Leu Tyr Asn Val Phe Pro Trp Ile Met Lys Phe Leu
225 230 235 240

Pro Gly Pro His Gln Thr Leu Phe Ser Asn Trp Lys Lys Leu Lys Leu
245 250 255

Phe Val Ser His Met Ile Asp Lys His Arg Lys Asp Trp Asn Pro Ala
260 265 270

Glu Thr Arg Asp Phe Ile Asp Ala Tyr Leu Lys Glu Met Ser Lys His
275 280 285

Thr Gly Asn Pro Thr Ser Ser Phe His Glu Glu Asn Leu Ile Cys Ser
290 295 300

Thr Leu Asp Leu Phe Phe Ala Gly Thr Glu Thr Thr Ser Thr Thr Leu
305 310 315 320

Arg Trp Ala Leu Leu Tyr Met Ala Leu Tyr Pro Glu Ile Gln Glu Lys
325 330 335

Val Gln Ala Glu Ile Asp Arg Val Ile Gly Gln Gly Gln Gln Pro Ser
340 345 350

Thr Ala Ala Arg Glu Ser Met Pro Tyr Thr Asn Ala Val Ile His Glu
355 360 365

Val Gln Arg Met Gly Asn Ile Ile Pro Leu Asn Val Pro Arg Glu Val
370 375 380

Thr Val Asp Thr Thr Leu Ala Gly Tyr His Leu Pro Lys Gly Thr Met
385 390 395 400

Ile Leu Thr Asn Leu Thr Ala Leu His Arg Asp Pro Thr Glu Trp Ala
405 410 415

Thr Pro Asp Thr Phe Asn Pro Asp His Phe Leu Glu Asn Gly Gln Phe
420 425 430

Lys Lys Arg Glu Ala Phe Met Pro Phe Ser Ile Gly Lys Arg Ala Cys
435 440 445

Leu Gly Glu Gln Leu Ala Arg Thr Glu Leu Phe Ile Phe Phe Thr Ser
450 455 460

Leu Met Gln Lys Phe Thr Phe Arg Pro Pro Asn Asn Glu Lys Leu Ser
465 470 475 480

Leu Lys Phe Arg Met Gly Ile Thr Ile Ser Pro Val Ser His Arg Leu
485 490 495

Cys Ala Val Pro Gln Val
500

<210> 137
<211> 766
<212> PRT
<213> Human

<400> 137

Met Lys Thr Pro Trp Arg Val Leu Leu Gly Leu Leu Gly Ala Ala Ala
1 5 10 15

Leu Val Thr Ile Ile Thr Val Pro Val Val Leu Leu Asn Lys Gly Thr
20 25 30

Asp Asp Ala Thr Ala Asp Ser Arg Lys Thr Tyr Thr Leu Thr Asp Tyr
35 40 45

```
Leu Lys Asn Thr Tyr Arg Leu Lys Leu Tyr Ser Leu Arg Trp Ile Ser
    50                  55                  60

Asp His Glu Tyr Leu Tyr Lys Gln Glu Asn Asn Ile Leu Val Phe Asn
65                  70                  75                  80

Ala Glu Tyr Gly Asn Ser Ser Val Phe Leu Glu Asn Ser Thr Phe Asp
                85                  90                  95

Glu Phe Gly His Ser Ile Asn Asp Tyr Ser Ile Ser Pro Asp Gly Gln
            100                 105                 110

Phe Ile Leu Leu Glu Tyr Asn Tyr Val Lys Gln Trp Arg His Ser Tyr
        115                 120                 125

Thr Ala Ser Tyr Asp Ile Tyr Asp Leu Asn Lys Arg Gln Leu Ile Thr
    130                 135                 140

Glu Glu Arg Ile Pro Asn Asn Thr Gln Trp Val Thr Trp Ser Pro Val
145                 150                 155                 160

Gly His Lys Leu Ala Tyr Val Trp Asn Asn Asp Ile Tyr Val Lys Ile
                165                 170                 175

Glu Pro Asn Leu Pro Ser Tyr Arg Ile Thr Trp Thr Gly Lys Glu Asp
            180                 185                 190

Ile Ile Tyr Asn Gly Ile Thr Asp Trp Val Tyr Glu Glu Glu Val Phe
        195                 200                 205

Ser Ala Tyr Ser Ala Leu Trp Trp Ser Pro Asn Gly Thr Phe Leu Ala
    210                 215                 220

Tyr Ala Gln Phe Asn Asp Thr Glu Val Pro Leu Ile Glu Tyr Ser Phe
225                 230                 235                 240

Tyr Ser Asp Glu Ser Leu Gln Tyr Pro Lys Thr Val Arg Val Pro Tyr
                245                 250                 255

Pro Lys Ala Gly Ala Val Asn Pro Thr Val Lys Phe Phe Val Val Asn
            260                 265                 270

Thr Asp Ser Leu Ser Ser Val Thr Asn Ala Thr Ser Ile Gln Ile Thr
        275                 280                 285
```

Ala Pro Ala Ser Met Leu Ile Gly Asp His Tyr Leu Cys Asp Val Thr
290 295 300

Trp Ala Thr Gln Glu Arg Ile Ser Leu Gln Trp Leu Arg Arg Ile Gln
305 310 315 320

Asn Tyr Ser Val Met Asp Ile Cys Asp Tyr Asp Glu Ser Ser Gly Arg
325 330 335

Trp Asn Cys Leu Val Ala Arg Gln His Ile Glu Met Ser Thr Thr Gly
340 345 350

Trp Val Gly Arg Phe Arg Pro Ser Glu Pro His Phe Thr Leu Asp Gly
355 360 365

Asn Ser Phe Tyr Lys Ile Ile Ser Asn Glu Glu Gly Tyr Arg His Ile
370 375 380

Cys Tyr Phe Gln Ile Asp Lys Lys Asp Cys Thr Phe Ile Thr Lys Gly
385 390 395 400

Thr Trp Glu Val Ile Gly Ile Glu Ala Leu Thr Ser Asp Tyr Leu Tyr
405 410 415

Tyr Ile Ser Asn Glu Tyr Lys Gly Met Pro Gly Gly Arg Asn Leu Tyr
420 425 430

Lys Ile Gln Leu Ser Asp Tyr Thr Lys Val Thr Cys Leu Ser Cys Glu
435 440 445

Leu Asn Pro Glu Arg Cys Gln Tyr Tyr Ser Val Ser Phe Ser Lys Glu
450 455 460

Ala Lys Tyr Tyr Gln Leu Arg Cys Ser Gly Pro Gly Leu Pro Leu Tyr
465 470 475 480

Thr Leu His Ser Ser Val Asn Asp Lys Gly Leu Arg Val Leu Glu Asp
485 490 495

Asn Ser Ala Leu Asp Lys Met Leu Gln Asn Val Gln Met Pro Ser Lys
500 505 510

Lys Leu Asp Phe Ile Ile Leu Asn Glu Thr Lys Phe Trp Tyr Gln Met
515 520 525

Ile Leu Pro Pro His Phe Asp Lys Ser Lys Lys Tyr Pro Leu Leu Leu
530 535 540

Asp Val Tyr Ala Gly Pro Cys Ser Gln Lys Ala Asp Ile Val Phe Arg
545 550 555 560

Leu Asn Trp Ala Thr Tyr Leu Ala Ser Thr Glu Asn Ile Ile Val Ala
565 570 575

Ser Phe Asp Gly Arg Gly Ser Gly Tyr Gln Gly Asp Lys Ile Met His
580 585 590

Ala Ile Asn Arg Arg Leu Gly Thr Phe Glu Val Glu Asp Gln Ile Glu
595 600 605

Ala Ala Arg Gln Phe Ser Lys Met Gly Phe Val Asp Asn Lys Arg Ile
610 615 620

Ala Ile Trp Gly Trp Ser Tyr Gly Gly Tyr Val Thr Ser Met Val Leu
625 630 635 640

Gly Ser Gly Ser Gly Val Phe Lys Cys Gly Ile Ala Val Ala Pro Val
645 650 655

Ser Arg Trp Glu Tyr Tyr Glu Ser Val Tyr Thr Glu Arg Tyr Met Gly
660 665 670

Leu Pro Thr Pro Glu Asp Asn Leu Asp His Tyr Arg Asn Ser Thr Val
675 680 685

Met Ser Arg Ala Glu Asn Phe Lys Gln Val Glu Tyr Leu Leu Ile His
690 695 700

Gly Thr Ala Asp Asp Asn Val His Phe Gln Gln Ser Ala Gln Ile Ser
705 710 715 720

Lys Ala Leu Val Asp Val Gly Val Asp Phe Gln Ala Met Trp Tyr Thr
725 730 735

Asp Glu Asp His Gly Ile Ala Ser Ser Thr Ala His Gln His Ile Tyr
740 745 750

Thr His Met Ser His Phe Ile Lys Gln Cys Phe Ser Leu Pro

755 760 765

<210> 138
<211> 984
<212> PRT
<213> Human

<400> 138

Met Glu Arg Arg Trp Pro Leu Gly Leu Gly Leu Val Leu Leu Leu Cys
1 5 10 15

Ala Pro Leu Pro Pro Gly Ala Arg Ala Lys Glu Val Thr Leu Met Asp
20 25 30

Thr Ser Lys Ala Gln Gly Glu Leu Gly Trp Leu Leu Asp Pro Pro Lys
35 40 45

Asp Gly Trp Ser Glu Gln Gln Gln Ile Leu Asn Gly Thr Pro Leu Tyr
50 55 60

Met Tyr Gln Asp Cys Pro Met Gln Gly Arg Arg Asp Thr Asp His Trp
65 70 75 80

Leu Arg Ser Asn Trp Ile Tyr Arg Gly Glu Glu Ala Ser Arg Val His
85 90 95

Val Glu Leu Gln Phe Thr Val Arg Asp Cys Lys Ser Phe Pro Gly Gly
100 105 110

Ala Gly Pro Leu Gly Cys Lys Glu Thr Phe Asn Leu Leu Tyr Met Glu
115 120 125

Ser Asp Gln Asp Val Gly Ile Gln Leu Arg Arg Pro Leu Phe Gln Lys
130 135 140

Val Thr Thr Val Ala Ala Asp Gln Ser Phe Thr Ile Arg Asp Leu Ala
145 150 155 160

Ser Gly Ser Val Lys Leu Asn Val Glu Arg Cys Ser Leu Gly Arg Leu
165 170 175

Thr Arg Arg Gly Leu Tyr Leu Ala Phe His Asn Pro Gly Ala Cys Val
180 185 190

Ala Leu Val Ser Val Arg Val Phe Tyr Gln Arg Cys Pro Glu Thr Leu

195 200 205

Asn Gly Leu Ala Gln Phe Pro Asp Thr Leu Pro Gly Pro Ala Gly Leu
210 215 220

Val Glu Val Ala Gly Thr Cys Leu Pro His Ala Arg Ala Ser Pro Arg
225 230 235 240

Pro Ser Gly Ala Pro Arg Met His Cys Ser Pro Asp Gly Glu Trp Leu
245 250 255

Val Pro Val Gly Arg Cys His Cys Glu Pro Gly Tyr Glu Glu Gly Gly
260 265 270

Ser Gly Glu Ala Cys Val Ala Cys Pro Ser Gly Ser Tyr Arg Met Asp
275 280 285

Met Asp Thr Pro His Cys Leu Thr Cys Pro Gln Gln Ser Thr Ala Glu
290 295 300

Ser Glu Gly Ala Thr Ile Cys Thr Cys Glu Ser Gly His Tyr Arg Ala
305 310 315 320

Pro Gly Glu Gly Pro Gln Val Ala Cys Thr Gly Pro Pro Ser Ala Pro
325 330 335

Arg Asn Leu Ser Phe Ser Ala Ser Gly Thr Gln Leu Ser Leu Arg Trp
340 345 350

Glu Pro Pro Ala Asp Thr Gly Gly Arg Gln Asp Val Arg Tyr Ser Val
355 360 365

Arg Cys Ser Gln Cys Gln Gly Thr Ala Gln Asp Gly Gly Pro Cys Gln
370 375 380

Pro Cys Gly Val Gly Val His Phe Ser Pro Gly Ala Arg Ala Leu Thr
385 390 395 400

Thr Pro Ala Val His Val Asn Gly Leu Glu Pro Tyr Ala Asn Tyr Thr
405 410 415

Phe Asn Val Glu Ala Gln Asn Gly Val Ser Gly Leu Gly Ser Ser Gly
420 425 430

His Ala Ser Thr Ser Val Ser Ile Ser Met Gly His Ala Glu Ser Leu
435 440 445

Ser Gly Leu Ser Leu Arg Leu Val Lys Lys Glu Pro Arg Gln Leu Glu
450 455 460

Leu Thr Trp Ala Gly Ser Arg Pro Arg Ser Pro Gly Ala Asn Leu Thr
465 470 475 480

Tyr Glu Leu His Val Leu Asn Gln Asp Glu Glu Arg Tyr Gln Met Val
485 490 495

Leu Glu Pro Arg Val Leu Leu Thr Glu Leu Gln Pro Asp Thr Thr Tyr
500 505 510

Ile Val Arg Val Arg Met Leu Thr Pro Leu Gly Pro Gly Pro Phe Ser
515 520 525

Pro Asp His Glu Phe Arg Thr Ser Pro Pro Val Ser Arg Gly Leu Thr
530 535 540

Gly Gly Glu Ile Val Ala Val Ile Phe Gly Leu Leu Leu Gly Ala Ala
545 550 555 560

Leu Leu Leu Gly Ile Leu Val Phe Arg Ser Arg Arg Ala Gln Arg Gln
565 570 575

Arg Gln Gln Arg His Val Thr Ala Pro Pro Met Trp Ile Glu Arg Thr
580 585 590

Ser Cys Ala Glu Ala Leu Cys Gly Thr Ser Arg His Thr Arg Thr Leu
595 600 605

His Arg Glu Pro Trp Thr Leu Pro Gly Gly Trp Ser Asn Phe Pro Ser
610 615 620

Arg Glu Leu Asp Pro Ala Trp Leu Met Val Asp Thr Val Ile Gly Glu
625 630 635 640

Gly Glu Phe Gly Glu Val Tyr Arg Gly Thr Leu Arg Leu Pro Ser Gln
645 650 655

Asp Cys Lys Thr Val Ala Ile Lys Thr Leu Lys Asp Thr Ser Pro Gly
660 665 670

Gly Gln Trp Trp Asn Phe Leu Arg Glu Ala Thr Ile Met Gly Gln Phe
675 680 685

Ser His Pro His Ile Leu His Leu Glu Gly Val Val Thr Lys Arg Lys
690 695 700

Pro Ile Met Ile Ile Thr Glu Phe Met Glu Asn Ala Ala Leu Asp Ala
705 710 715 720

Phe Leu Arg Glu Arg Glu Asp Gln Leu Val Pro Gly Gln Leu Val Ala
725 730 735

Met Leu Gln Gly Ile Ala Ser Gly Met Asn Tyr Leu Ser Asn His Asn
740 745 750

Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Asn Gln Asn
755 760 765

Leu Cys Cys Lys Val Ser Asp Phe Gly Leu Thr Arg Leu Leu Asp Asp
770 775 780

Phe Asp Gly Thr Tyr Glu Thr Gln Gly Gly Lys Ile Pro Ile Arg Trp
785 790 795 800

Thr Ala Pro Glu Ala Ile Ala His Arg Ile Phe Thr Thr Ala Ser Asp
805 810 815

Val Trp Ser Phe Gly Ile Val Met Trp Glu Val Leu Ser Phe Gly Asp
820 825 830

Lys Pro Tyr Gly Glu Met Ser Asn Gln Glu Val Met Lys Ser Ile Glu
835 840 845

Asp Gly Tyr Arg Leu Pro Pro Pro Val Asp Cys Pro Ala Pro Leu Tyr
850 855 860

Glu Leu Met Lys Asn Cys Trp Ala Tyr Asp Arg Ala Arg Arg Pro His
865 870 875 880

Phe Gln Lys Leu Gln Ala His Leu Glu Gln Leu Leu Ala Asn Pro His
885 890 895

Ser Leu Arg Thr Ile Ala Asn Phe Asp Pro Arg Val Thr Leu Arg Leu
900 905 910

Pro Ser Leu Ser Gly Ser Asp Gly Ile Pro Tyr Arg Thr Val Ser Glu
915 920 925

Trp Leu Glu Ser Ile Arg Met Lys Arg Tyr Ile Leu His Phe His Ser
930 935 940

Ala Gly Leu Asp Thr Met Glu Cys Val Leu Glu Leu Thr Ala Glu Asp
945 950 955 960

Leu Thr Gln Met Gly Ile Thr Leu Pro Gly His Gln Lys Arg Ile Leu
965 970 975

Cys Ser Ile Gln Gly Phe Lys Asp
980

<210> 139
<211> 822
<212> PRT
<213> Human

<400> 139

Met Val Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala
1 5 10 15

Thr Leu Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr
20 25 30

Leu Glu Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu
35 40 45

Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu
50 55 60

Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
65 70 75 80

Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly
85 90 95

Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
100 105 110

Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile
115 120 125

Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val
130 135 140

Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu
145 150 155 160

Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys
165 170 175

Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu
180 185 190

Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys
195 200 205

Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser
210 215 220

Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile
225 230 235 240

Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro
245 250 255

Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly
260 265 270

Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile
275 280 285

Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp
290 295 300

Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser
305 310 315 320

Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly
325 330 335

Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser
340 345 350

Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys

355 360 365

Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile
370 375 380

Gly Val Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg
385 390 395 400

Met Lys Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val
405 410 415

His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser
420 425 430

Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile
435 440 445

Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val
450 455 460

Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp
465 470 475 480

Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
485 490 495

Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala
500 505 510

Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp
515 520 525

Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
530 535 540

His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro
545 550 555 560

Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr
565 570 575

Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn
580 585 590

Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr
595 600 605

Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
610 615 620

His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val
625 630 635 640

Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp
645 650 655

Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
660 665 670

Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
675 680 685

Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
690 695 700

Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
705 710 715 720

His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
725 730 735

Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
740 745 750

Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

Glu Tyr Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr
770 775 780

Pro Asp Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser Val Phe Ser
785 790 795 800

Pro Asp Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile
805 810 815

Asn Gly Ser Val Lys Thr
820

<210> 140
<211> 87
<212> PRT
<213> Human

<400> 140

Met Gln Lys Val Thr Leu Gly Leu Leu Val Phe Leu Ala Gly Phe Pro
1 5 10 15

Val Leu Asp Ala Asn Asp Leu Glu Asp Lys Asn Ser Pro Phe Tyr Tyr
20 25 30

Asp Trp His Ser Leu Gln Val Gly Gly Leu Ile Cys Ala Gly Val Leu
35 40 45

Cys Ala Met Gly Ile Ile Ile Val Met Ser Ala Lys Cys Lys Cys Lys
50 55 60

Phe Gly Gln Lys Ser Gly His His Pro Gly Glu Thr Pro Pro Leu Ile
65 70 75 80

Thr Pro Gly Ser Ala Gln Ser
85

<210> 141
<211> 907
<212> PRT
<213> Human

<400> 141

Met Asp Thr Ser Arg Leu Gly Val Leu Leu Ser Leu Pro Val Leu Leu
1 5 10 15

Gln Leu Ala Thr Gly Gly Ser Ser Pro Arg Ser Gly Val Leu Leu Arg
20 25 30

Gly Cys Pro Thr His Cys His Cys Glu Pro Asp Gly Arg Met Leu Leu
35 40 45

Arg Val Asp Cys Ser Asp Leu Gly Leu Ser Glu Leu Pro Ser Asn Leu
50 55 60

Ser Val Phe Thr Ser Tyr Leu Asp Leu Ser Met Asn Asn Ile Ser Gln
65 70 75 80

Leu Leu Pro Asn Pro Leu Pro Ser Leu Arg Phe Leu Glu Glu Leu Arg
85 90 95

Leu Ala Gly Asn Ala Leu Thr Tyr Ile Pro Lys Gly Ala Phe Thr Gly
100 105 110

Leu Tyr Ser Leu Lys Val Leu Met Leu Gln Asn Asn Gln Leu Arg His
115 120 125

Val Pro Thr Glu Ala Leu Gln Asn Leu Arg Ser Leu Gln Ser Leu Arg
130 135 140

Leu Asp Ala Asn His Ile Ser Tyr Val Pro Pro Ser Cys Phe Ser Gly
145 150 155 160

Leu His Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu
165 170 175

Ile Pro Val Gln Ala Phe Arg Ser Leu Ser Ala Leu Gln Ala Met Thr
180 185 190

Leu Ala Leu Asn Lys Ile His His Ile Pro Asp Tyr Ala Phe Gly Asn
195 200 205

Leu Ser Ser Leu Val Val Leu His Leu His Asn Asn Arg Ile His Ser
210 215 220

Leu Gly Lys Lys Cys Phe Asp Gly Leu His Ser Leu Glu Thr Leu Asp
225 230 235 240

Leu Asn Tyr Asn Asn Leu Asp Glu Phe Pro Thr Ala Ile Arg Thr Leu
245 250 255

Ser Asn Leu Lys Glu Leu Gly Phe His Ser Asn Asn Ile Arg Ser Ile
260 265 270

Pro Glu Lys Ala Phe Val Gly Asn Pro Ser Leu Ile Thr Ile His Phe
275 280 285

Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln His Leu
290 295 300

Pro Glu Leu Arg Thr Leu Thr Leu Asn Gly Ala Ser Gln Ile Thr Glu
305 310 315 320

Phe Pro Asp Leu Thr Gly Thr Ala Asn Leu Glu Ser Leu Thr Leu Thr
325 330 335

Gly Ala Gln Ile Ser Ser Leu Pro Gln Thr Val Cys Asn Gln Leu Pro
340 345 350

Asn Leu Gln Val Leu Asp Leu Ser Tyr Asn Leu Leu Glu Asp Leu Pro
355 360 365

Ser Phe Ser Val Cys Gln Lys Leu Gln Lys Ile Asp Leu Arg His Asn
370 375 380

Glu Ile Tyr Glu Ile Lys Val Asp Thr Phe Gln Gln Leu Leu Ser Leu
385 390 395 400

Arg Ser Leu Asn Leu Ala Trp Asn Lys Ile Ala Ile Ile His Pro Asn
405 410 415

Ala Phe Ser Thr Leu Pro Ser Leu Ile Lys Leu Asp Leu Ser Ser Asn
420 425 430

Leu Leu Ser Ser Phe Pro Ile Thr Gly Leu His Gly Leu Thr His Leu
435 440 445

Lys Leu Thr Gly Asn His Ala Leu Gln Ser Leu Ile Ser Ser Glu Asn
450 455 460

Phe Pro Glu Leu Lys Val Ile Glu Met Pro Tyr Ala Tyr Gln Cys Cys
465 470 475 480

Ala Phe Gly Val Cys Glu Asn Ala Tyr Lys Ile Ser Asn Gln Trp Asn
485 490 495

Lys Gly Asp Asn Ser Ser Met Asp Asp Leu His Lys Lys Asp Ala Gly
500 505 510

Met Phe Gln Ala Gln Asp Glu Arg Asp Leu Glu Asp Phe Leu Leu Asp
515 520 525

Phe Glu Glu Asp Leu Lys Ala Leu His Ser Val Gln Cys Ser Pro Ser
530 535 540

Pro Gly Pro Phe Lys Pro Cys Glu His Leu Leu Asp Gly Trp Leu Ile
545 550 555 560

Arg Ile Gly Val Trp Thr Ile Ala Val Leu Ala Leu Thr Cys Asn Ala
565 570 575

Leu Val Thr Ser Thr Val Phe Arg Ser Pro Leu Tyr Ile Ser Pro Ile
580 585 590

Lys Leu Leu Ile Gly Val Ile Ala Ala Val Asn Met Leu Thr Gly Val
595 600 605

Ser Ser Ala Val Leu Ala Gly Val Asp Ala Phe Thr Phe Gly Ser Phe
610 615 620

Ala Arg His Gly Ala Trp Trp Glu Asn Gly Val Gly Cys His Val Ile
625 630 635 640

Gly Phe Leu Ser Ile Phe Ala Ser Glu Ser Ser Val Phe Leu Leu Thr
645 650 655

Leu Ala Ala Leu Glu Arg Gly Phe Ser Val Lys Tyr Ser Ala Lys Phe
660 665 670

Glu Thr Lys Ala Pro Phe Ser Ser Leu Lys Val Ile Ile Leu Leu Cys
675 680 685

Ala Leu Leu Ala Leu Thr Met Ala Ala Val Pro Leu Leu Gly Gly Ser
690 695 700

Lys Tyr Gly Ala Ser Pro Leu Cys Leu Pro Leu Pro Phe Gly Glu Pro
705 710 715 720

Ser Thr Met Gly Tyr Met Val Ala Leu Ile Leu Leu Asn Ser Leu Cys
725 730 735

Phe Leu Met Met Thr Ile Ala Tyr Thr Lys Leu Tyr Cys Asn Leu Asp
740 745 750

Lys Gly Asp Leu Glu Asn Ile Trp Asp Cys Ser Met Val Lys His Ile
755 760 765

Ala Leu Leu Leu Phe Thr Asn Cys Ile Leu Asn Cys Pro Val Ala Phe
770 775 780

Leu Ser Phe Ser Ser Leu Ile Asn Leu Thr Phe Ile Ser Pro Glu Val

785 790 795 800

Ile Lys Phe Ile Leu Leu Val Val Val Pro Leu Pro Ala Cys Leu Asn
805 810 815

Pro Leu Leu Tyr Ile Leu Phe Asn Pro His Phe Lys Glu Asp Leu Val
820 825 830

Ser Leu Arg Lys Gln Thr Tyr Val Trp Thr Arg Ser Lys His Pro Ser
835 840 845

Leu Met Ser Ile Asn Ser Asp Asp Val Glu Lys Gln Ser Cys Asp Ser
850 855 860

Thr Gln Ala Leu Val Thr Phe Thr Ser Ser Ser Ile Thr Tyr Asp Leu
865 870 875 880

Pro Pro Ser Ser Val Pro Ser Pro Ala Tyr Pro Val Thr Glu Ser Cys
885 890 895

His Leu Ser Ser Val Ala Phe Val Pro Cys Leu
900 905

<210> 142
<211> 1134
<212> PRT
<213> Human

<400> 142

Met Glu Ser Thr Pro Ser Phe Leu Lys Gly Thr Pro Thr Trp Glu Lys
1 5 10 15

Thr Ala Pro Glu Asn Gly Ile Val Arg Gln Glu Pro Gly Ser Pro Pro
20 25 30

Arg Asp Gly Leu His His Gly Pro Leu Cys Leu Gly Glu Pro Ala Pro
35 40 45

Phe Trp Arg Gly Val Leu Ser Thr Pro Asp Ser Trp Leu Pro Pro Gly
50 55 60

Phe Pro Gln Gly Pro Lys Asp Met Leu Pro Leu Val Glu Gly Glu Gly
65 70 75 80

Pro Gln Asn Gly Glu Arg Lys Val Asn Trp Leu Gly Ser Lys Glu Gly

85 90 95

Leu Arg Trp Lys Glu Ala Met Leu Thr His Pro Leu Ala Phe Cys Gly
100 105 110

Pro Ala Cys Pro Pro Arg Cys Gly Pro Leu Met Pro Glu His Ser Gly
115 120 125

Gly His Leu Lys Ser Asp Pro Val Ala Phe Arg Pro Trp His Cys Pro
130 135 140

Phe Leu Leu Glu Thr Lys Ile Leu Glu Arg Ala Pro Phe Trp Val Pro
145 150 155 160

Thr Cys Leu Pro Pro Tyr Leu Val Ser Gly Leu Pro Pro Glu His Pro
165 170 175

Cys Asp Trp Pro Leu Thr Pro His Pro Trp Val Tyr Ser Gly Gly Gln
180 185 190

Pro Lys Val Pro Ser Ala Phe Ser Leu Gly Ser Lys Gly Phe Tyr Tyr
195 200 205

Lys Asp Pro Ser Ile Pro Arg Leu Ala Lys Glu Pro Leu Ala Ala Ala
210 215 220

Glu Pro Gly Leu Phe Gly Leu Asn Ser Gly Gly His Leu Gln Arg Ala
225 230 235 240

Gly Glu Ala Glu Arg Pro Ser Leu His Gln Arg Asp Gly Glu Met Gly
245 250 255

Ala Gly Arg Gln Gln Asn Pro Cys Pro Leu Phe Leu Gly Gln Pro Asp
260 265 270

Thr Val Pro Trp Thr Ser Trp Pro Ala Cys Pro Pro Gly Leu Val His
275 280 285

Thr Leu Gly Asn Val Trp Ala Gly Pro Gly Asp Gly Asn Leu Gly Tyr
290 295 300

Gln Leu Gly Pro Pro Ala Thr Pro Arg Cys Pro Ser Pro Glu Pro Pro
305 310 315 320

Val Thr Gln Arg Gly Cys Cys Ser Ser Tyr Pro Pro Thr Lys Gly Gly
325 330 335

Gly Leu Gly Pro Cys Gly Lys Cys Gln Glu Gly Leu Glu Gly Gly Ala
340 345 350

Ser Gly Ala Ser Glu Pro Ser Glu Glu Val Asn Lys Ala Ser Gly Pro
355 360 365

Arg Ala Cys Pro Pro Ser His His Thr Lys Leu Lys Lys Thr Trp Leu
370 375 380

Thr Arg His Ser Glu Gln Phe Glu Cys Pro Arg Gly Cys Pro Glu Val
385 390 395 400

Glu Glu Arg Pro Val Ala Arg Leu Arg Ala Leu Lys Arg Ala Gly Ser
405 410 415

Pro Glu Val Gln Gly Ala Met Gly Ser Pro Ala Pro Lys Arg Pro Pro
420 425 430

Asp Pro Phe Pro Gly Thr Ala Glu Gln Gly Ala Gly Gly Trp Gln Glu
435 440 445

Val Arg Asp Thr Ser Ile Gly Asn Lys Asp Val Asp Ser Gly Gln His
450 455 460

Asp Glu Gln Lys Gly Pro Gln Asp Gly Gln Ala Ser Leu Gln Asp Pro
465 470 475 480

Gly Leu Gln Asp Ile Pro Cys Leu Ala Leu Pro Ala Lys Leu Ala Gln
485 490 495

Cys Gln Ser Cys Ala Gln Ala Ala Gly Glu Gly Gly Gly His Ala Cys
500 505 510

His Ser Gln Gln Val Arg Arg Ser Pro Leu Gly Gly Glu Leu Gln Gln
515 520 525

Glu Glu Asp Thr Ala Thr Asn Ser Ser Ser Glu Glu Gly Pro Gly Ser
530 535 540

Gly Pro Asp Ser Arg Leu Ser Thr Gly Leu Ala Lys His Leu Leu Ser
545 550 555 560

Gly Leu Gly Asp Arg Leu Cys Arg Leu Leu Arg Arg Glu Arg Glu Ala
565 570 575

Leu Ala Trp Ala Gln Arg Glu Gly Gln Gly Pro Ala Val Thr Glu Asp
580 585 590

Ser Pro Gly Ile Pro Arg Cys Cys Ser Arg Cys His His Gly Leu Phe
595 600 605

Asn Thr His Trp Arg Cys Pro Arg Cys Ser His Arg Leu Cys Val Ala
610 615 620

Cys Gly Arg Val Ala Gly Thr Gly Arg Ala Arg Glu Lys Ala Gly Phe
625 630 635 640

Gln Glu Gln Ser Ala Glu Glu Cys Thr Gln Glu Ala Gly His Ala Ala
645 650 655

Cys Ser Leu Met Leu Thr Gln Phe Val Ser Ser Gln Ala Leu Ala Glu
660 665 670

Leu Ser Thr Ala Met His Gln Val Trp Val Lys Phe Asp Ile Arg Gly
675 680 685

His Cys Pro Cys Gln Ala Asp Ala Arg Val Trp Ala Pro Gly Asp Ala
690 695 700

Gly Gln Gln Lys Glu Ser Thr Gln Lys Thr Pro Pro Thr Pro Gln Pro
705 710 715 720

Ser Cys Asn Gly Asp Thr His Arg Thr Lys Ser Ile Lys Glu Glu Thr
725 730 735

Pro Asp Ser Ala Glu Thr Pro Ala Glu Asp Arg Ala Gly Arg Gly Pro
740 745 750

Leu Pro Cys Pro Ser Leu Cys Glu Leu Leu Ala Ser Thr Ala Val Lys
755 760 765

Leu Cys Leu Gly His Glu Arg Ile His Met Ala Phe Ala Pro Val Thr
770 775 780

Pro Ala Leu Pro Ser Asp Asp Arg Ile Thr Asn Ile Leu Asp Ser Ile
785 790 795 800

Ile Ala Gln Val Val Glu Arg Lys Ile Gln Glu Lys Ala Leu Gly Pro
805 810 815

Gly Leu Arg Ala Gly Pro Gly Leu Arg Lys Gly Leu Gly Leu Pro Leu
820 825 830

Ser Pro Val Arg Pro Arg Leu Pro Pro Pro Gly Ala Leu Leu Trp Leu
835 840 845

Gln Glu Pro Gln Pro Cys Pro Arg Arg Gly Phe His Leu Phe Gln Glu
850 855 860

His Trp Arg Gln Gly Gln Pro Val Leu Val Ser Gly Ile Gln Arg Thr
865 870 875 880

Leu Gln Gly Asn Leu Trp Gly Thr Glu Ala Leu Gly Ala Leu Gly Gly
885 890 895

Gln Val Gln Ala Leu Ser Pro Leu Gly Pro Pro Gln Pro Ser Ser Leu
900 905 910

Gly Ser Thr Thr Phe Trp Glu Gly Phe Ser Trp Pro Glu Leu Arg Pro
915 920 925

Lys Ser Asp Glu Gly Ser Val Leu Leu Leu His Arg Ala Leu Gly Asp
930 935 940

Glu Asp Thr Ser Arg Val Glu Asn Leu Ala Ala Ser Leu Pro Leu Pro
945 950 955 960

Glu Tyr Cys Ala Leu His Gly Lys Leu Asn Leu Ala Ser Tyr Leu Pro
965 970 975

Pro Gly Leu Ala Leu Arg Pro Leu Glu Pro Gln Leu Trp Ala Ala Tyr
980 985 990

Gly Val Ser Pro His Arg Gly His Leu Gly Thr Lys Asn Leu Cys Val
995 1000 1005

Glu Val Ala Asp Leu Val Ser Ile Leu Val His Ala Asp Thr Pro
1010 1015 1020

Leu Pro Ala Trp His Arg Ala Gln Lys Asp Phe Leu Ser Gly Leu

1025 1030 1035

Asp Gly Glu Gly Leu Trp Ser Pro Gly Ser Gln Val Ser Thr Val
1040 1045 1050

Trp His Val Phe Arg Ala Gln Asp Ala Gln Arg Ile Arg Arg Phe
1055 1060 1065

Leu Gln Met Val Gln Gly Leu Val Ser Thr Val Ser Val Thr Gln
1070 1075 1080

His Phe Leu Ser Pro Glu Thr Ser Ala Leu Ser Ala Gln Leu Cys
1085 1090 1095

His Gln Gly Pro Ser Leu Pro Pro Asp Cys His Leu Leu Tyr Ala
1100 1105 1110

Gln Met Asp Trp Ala Val Phe Gln Ala Val Lys Val Ala Val Gly
1115 1120 1125

Thr Leu Gln Glu Ala Lys
1130

<210> 143
<211> 142
<212> PRT
<213> Human

<400> 143

Met Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly
1 5 10 15

Lys Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg
20 25 30

Met Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp
35 40 45

Leu Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala
50 55 60

Asp Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala
65 70 75 80

Leu Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro

85 90 95

Val Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala
100 105 110

His Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys
115 120 125

Phe Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 144
<211> 543
<212> PRT
<213> Human

<400> 144

Met Leu Leu Arg Ser Lys Pro Ala Leu Pro Pro Pro Leu Met Leu Leu
1 5 10 15

Leu Leu Gly Pro Leu Gly Pro Leu Ser Pro Gly Ala Leu Pro Arg Pro
20 25 30

Ala Gln Ala Gln Asp Val Val Asp Leu Asp Phe Phe Thr Gln Glu Pro
35 40 45

Leu His Leu Val Ser Pro Ser Phe Leu Ser Val Thr Ile Asp Ala Asn
50 55 60

Leu Ala Thr Asp Pro Arg Phe Leu Ile Leu Leu Gly Ser Pro Lys Leu
65 70 75 80

Arg Thr Leu Ala Arg Gly Leu Ser Pro Ala Tyr Leu Arg Phe Gly Gly
85 90 95

Thr Lys Thr Asp Phe Leu Ile Phe Asp Pro Lys Lys Glu Ser Thr Phe
100 105 110

Glu Glu Arg Ser Tyr Trp Gln Ser Gln Val Asn Gln Asp Ile Cys Lys
115 120 125

Tyr Gly Ser Ile Pro Pro Asp Val Glu Glu Lys Leu Arg Leu Glu Trp
130 135 140

Pro Tyr Gln Glu Gln Leu Leu Leu Arg Glu His Tyr Gln Lys Lys Phe

145 150 155 160

Lys Asn Ser Thr Tyr Ser Arg Ser Ser Val Asp Val Leu Tyr Thr Phe
165 170 175

Ala Asn Cys Ser Gly Leu Asp Leu Ile Phe Gly Leu Asn Ala Leu Leu
180 185 190

Arg Thr Ala Asp Leu Gln Trp Asn Ser Ser Asn Ala Gln Leu Leu Leu
195 200 205

Asp Tyr Cys Ser Ser Lys Gly Tyr Asn Ile Ser Trp Glu Leu Gly Asn
210 215 220

Glu Pro Asn Ser Phe Leu Lys Lys Ala Asp Ile Phe Ile Asn Gly Ser
225 230 235 240

Gln Leu Gly Glu Asp Phe Ile Gln Leu His Lys Leu Leu Arg Lys Ser
245 250 255

Thr Phe Lys Asn Ala Lys Leu Tyr Gly Pro Asp Val Gly Gln Pro Arg
260 265 270

Arg Lys Thr Ala Lys Met Leu Lys Ser Phe Leu Lys Ala Gly Gly Glu
275 280 285

Val Ile Asp Ser Val Thr Trp His His Tyr Tyr Leu Asn Gly Arg Thr
290 295 300

Ala Thr Arg Glu Asp Phe Leu Asn Pro Asp Val Leu Asp Ile Phe Ile
305 310 315 320

Ser Ser Val Gln Lys Val Phe Gln Val Val Glu Ser Thr Arg Pro Gly
325 330 335

Lys Lys Val Trp Leu Gly Glu Thr Ser Ser Ala Tyr Gly Gly Gly Ala
340 345 350

Pro Leu Leu Ser Asp Thr Phe Ala Ala Gly Phe Met Trp Leu Asp Lys
355 360 365

Leu Gly Leu Ser Ala Arg Met Gly Ile Glu Val Val Met Arg Gln Val
370 375 380

Phe Phe Gly Ala Gly Asn Tyr His Leu Val Asp Glu Asn Phe Asp Pro
385 390 395 400

Leu Pro Asp Tyr Trp Leu Ser Leu Leu Phe Lys Lys Leu Val Gly Thr
405 410 415

Lys Val Leu Met Ala Ser Val Gln Gly Ser Lys Arg Arg Lys Leu Arg
420 425 430

Val Tyr Leu His Cys Thr Asn Thr Asp Asn Pro Arg Tyr Lys Glu Gly
435 440 445

Asp Leu Thr Leu Tyr Ala Ile Asn Leu His Asn Val Thr Lys Tyr Leu
450 455 460

Arg Leu Pro Tyr Pro Phe Ser Asn Lys Gln Val Asp Lys Tyr Leu Leu
465 470 475 480

Arg Pro Leu Gly Pro His Gly Leu Leu Ser Lys Ser Val Gln Leu Asn
485 490 495

Gly Leu Thr Leu Lys Met Val Asp Asp Gln Thr Leu Pro Pro Leu Met
500 505 510

Glu Lys Pro Leu Arg Pro Gly Ser Ser Leu Gly Leu Pro Ala Phe Ser
515 520 525

Tyr Ser Phe Phe Val Ile Arg Asn Ala Lys Val Ala Ala Cys Ile
530 535 540

<210> 145
<211> 203
<212> PRT
<213> Human

<400> 145

Cys Ser Val Pro Phe Leu Pro Leu Ala Val Pro Val Arg Ala Val His
1 5 10 15

Arg Leu Leu Glu His Arg His His Ser Val Thr Trp Pro Ala Thr Glu
20 25 30

Leu Pro Ile Thr Gln Leu Thr Ser Ser Ile Val Arg Arg Val Asn Glu
35 40 45

Ala Ser Gly Leu Tyr Gln Met Phe Gly Val Leu Ala Asp Val Ile Leu
50 55 60

Leu Lys Glu Thr Gly Gly Glu Val Pro Pro Cys Thr Leu Ala Pro Ala
65 70 75 80

Ser Ala His Gly His Pro Ser His Arg Gly Arg Leu Leu Asn Arg Leu
85 90 95

Asp Cys Pro Asp Arg Ala His Pro Thr Ser Glu Ala Leu Pro Gly Glu
100 105 110

Leu Phe Gly His Arg Phe Ala Lys Leu Leu Cys Arg Val Leu Leu Pro
115 120 125

Val Arg Pro His Ala Pro Glu Val Ala Thr Leu Leu Pro Ala Gly Val
130 135 140

Pro Glu Asp Ala Gly Thr Arg Glu Tyr Arg Glu Pro Leu Ala Ala Gln
145 150 155 160

Ser Gly Glu Gln Ala Pro Ala Gly Leu Cys Pro His Arg Gln Ala Pro
165 170 175

Gly Gly Gln Gln Pro Ala Ala Trp Arg Pro Arg Ala Thr Arg Phe Pro
180 185 190

Pro Gly Ser Arg Ala Ser Gly Ser Val Arg Arg
195 200

<210> 146
<211> 414
<212> PRT
<213> Human

<400> 146

Met Lys Ala Gln Thr Ala Leu Ser Phe Phe Leu Ile Leu Ile Thr Ser
1 5 10 15

Leu Ser Gly Ser Gln Gly Ile Phe Pro Leu Ala Phe Phe Ile Tyr Val
20 25 30

Pro Met Asn Glu Gln Ile Val Ile Gly Arg Leu Asp Glu Asp Ile Ile
35 40 45

Leu Pro Ser Ser Phe Glu Arg Gly Ser Glu Val Val Ile His Trp Lys
    50   55   60

Tyr Gln Asp Ser Tyr Lys Val His Ser Tyr Tyr Lys Gly Ser Asp His
65   70   75   80

Leu Glu Ser Gln Asp Pro Arg Tyr Ala Asn Arg Thr Ser Leu Phe Tyr
                85   90   95

Asn Glu Ile Gln Asn Gly Asn Ala Ser Leu Phe Phe Arg Arg Val Ser
            100   105   110

Leu Leu Asp Glu Gly Ile Tyr Thr Cys Tyr Val Gly Thr Ala Ile Gln
        115   120   125

Val Ile Thr Asn Lys Val Val Leu Lys Val Gly Val Phe Leu Thr Pro
    130   135   140

Val Met Lys Tyr Glu Lys Arg Asn Thr Asn Ser Phe Leu Ile Cys Ser
145   150   155   160

Val Leu Ser Val Tyr Pro Arg Pro Ile Ile Thr Trp Lys Met Asp Asn
                165   170   175

Thr Pro Ile Ser Glu Asn Asn Met Glu Glu Thr Gly Ser Leu Asp Ser
            180   185   190

Phe Ser Ile Asn Ser Pro Leu Asn Ile Thr Gly Ser Asn Ser Ser Tyr
        195   200   205

Glu Cys Thr Ile Glu Asn Ser Leu Leu Lys Gln Thr Trp Thr Gly Arg
    210   215   220

Trp Thr Met Lys Asp Gly Leu His Lys Met Gln Ser Glu His Val Ser
225   230   235   240

Leu Ser Cys Gln Pro Val Asn Asp Tyr Phe Ser Pro Asn Gln Asp Phe
                245   250   255

Lys Val Thr Trp Ser Arg Met Lys Ser Gly Thr Phe Ser Val Leu Ala
            260   265   270

Tyr Tyr Leu Ser Ser Ser Gln Asn Thr Ile Ile Asn Glu Ser Arg Phe
        275   280   285

Ser Trp Asn Lys Glu Leu Ile Asn Gln Ser Asp Phe Ser Met Asn Leu
290 295 300

Met Asp Leu Asn Leu Ser Asp Ser Gly Glu Tyr Leu Cys Asn Ile Ser
305 310 315 320

Ser Asp Glu Tyr Thr Leu Leu Thr Ile His Thr Val His Val Glu Pro
325 330 335

Ser Gln Glu Thr Ala Ser His Asn Lys Gly Leu Trp Ile Leu Val Pro
340 345 350

Ser Ala Ile Leu Ala Ala Phe Leu Leu Ile Trp Ser Val Lys Cys Cys
355 360 365

Arg Ala Gln Leu Glu Ala Arg Arg Ser Arg His Pro Ala Asp Gly Ala
370 375 380

Gln Gln Glu Arg Cys Cys Val Pro Pro Gly Glu Arg Cys Pro Ser Ala
385 390 395 400

Pro Asp Asn Gly Glu Glu Asn Val Pro Leu Ser Gly Lys Val
405 410

<210> 147
<211> 545
<212> PRT
<213> Human

<400> 147

Met Val Asp Ala Ala Glu Asn Leu Cys Pro Asn Val Met Lys Lys Ala
1 5 10 15

His Ile Arg Gln Asp Leu Ile His Ala Ser Thr Glu Lys Ile Ser Ile
20 25 30

Pro Arg Thr Phe Val Lys Asn Val Leu Leu Glu Gln Ser Gly Ile Asp
35 40 45

Ile Leu Asn Lys Ile Ser Glu Val Lys Leu Thr Val Ala Ser Phe Leu
50 55 60

Ser Asp Arg Ile Val Asp Glu Ile Leu Asp Ala Leu Ser His Cys His
65 70 75 80

His Lys Leu Ala Asp His Phe Ser Arg Arg Gly Lys Thr Leu Pro Gln
85 90 95

Gln Glu Ser Leu Glu Ile Glu Leu Ala Glu Glu Arg Pro Val Lys Arg
100 105 110

Ser Ile Ile Thr Val Glu Glu Leu Thr Glu Ile Glu Arg Leu Glu Asp
115 120 125

Leu Asp Thr Cys Met Met Thr Pro Lys Ser Lys Arg Lys Ser Ile His
130 135 140

Ser Arg Met Leu Arg Pro Val Ser Arg Ala Phe Glu Met Glu Phe Asp
145 150 155 160

Leu Asp Lys Ala Leu Glu Glu Val Pro Ile His Ile Glu Asp Pro Pro
165 170 175

Phe Pro Ser Leu Arg Gln Glu Lys Arg Ser Ser Gly Phe Ile Ser Glu
180 185 190

Leu Pro Ser Glu Glu Gly Lys Lys Leu Glu His Phe Thr Lys Leu Arg
195 200 205

Pro Lys Arg Asn Lys Lys Gln Gln Pro Thr Gln Ala Ala Val Cys Ala
210 215 220

Ala Asn Ile Val Ser Gln Asp Gly Glu Gln Asn Gly Leu Met Gly Arg
225 230 235 240

Val Asp Glu Gly Val Asp Glu Phe Phe Thr Lys Lys Val Thr Lys Met
245 250 255

Asp Ser Lys Lys Trp Ser Thr Arg Gly Ser Glu Ser His Glu Leu Asn
260 265 270

Glu Gly Gly Asp Glu Lys Lys Lys Arg Asp Ser Arg Lys Ser Ser Gly
275 280 285

Phe Leu Asn Leu Ile Lys Ser Arg Ser Lys Ser Glu Arg Pro Pro Thr
290 295 300

Ile Leu Met Thr Glu Glu Pro Ser Ser Pro Lys Gly Ala Val Arg Ser
305 310 315 320

```
Pro Pro Val Asp Cys Pro Arg Lys Asp Thr Lys Ala Ala Glu His Asn
                325                 330                 335

Gly Asn Ser Glu Arg Ile Glu Glu Ile Lys Thr Pro Asp Ser Phe Glu
            340                 345                 350

Glu Ser Gln Gly Glu Glu Ile Gly Lys Val Glu Arg Ser Asp Ser Lys
        355                 360                 365

Ser Ser Pro Gln Ala Gly Arg Arg Tyr Gly Val Gln Val Met Gly Ser
    370                 375                 380

Gly Leu Leu Ala Glu Met Lys Ala Lys Gln Glu Asn Arg Phe Gly Leu
385                 390                 395                 400

Gly Thr Pro Glu Lys Asn Thr Lys Ala Glu Pro Lys Ala Glu Ala Gly
                405                 410                 415

Ser Arg Ser Arg Ser Ser Ser Ser Thr Pro Thr Ser Pro Lys Pro Leu
            420                 425                 430

Leu Gln Ser Pro Lys Pro Ser Leu Ala Ala Arg Pro Val Ile Pro Gln
        435                 440                 445

Lys Pro Arg Thr Ala Ser Arg Pro Asp Asp Ile Pro Asp Ser Pro Ser
    450                 455                 460

Ser Pro Lys Val Ala Leu Leu Pro Pro Val Leu Lys Lys Val Pro Ser
465                 470                 475                 480

Asp Lys Glu Arg Asp Gly Gln Ser Ser Pro Gln Pro Ser Pro Arg Thr
                485                 490                 495

Phe Ser Gln Glu Val Ser Arg Arg Ser Trp Gly Gln Gln Ala Gln Glu
            500                 505                 510

Tyr Gln Glu Gln Lys Gln Arg Ser Ser Ser Lys Asp Gly His Gln Gly
        515                 520                 525

Ser Lys Ser Asn Asp Ser Gly Glu Glu Ala Glu Lys Glu Phe Ile Phe
    530                 535                 540

Val
```

545

<210> 148
<211> 315
<212> PRT
<213> Human

<400> 148

Met Pro Leu Lys Leu Arg Gly Lys Lys Lys Ala Lys Ser Lys Glu Thr
1 5 10 15

Ala Gly Leu Val Glu Gly Glu Pro Thr Gly Ala Gly Gly Gly Ser Leu
20 25 30

Ser Ala Ser Arg Ala Pro Ala Arg Arg Leu Val Phe His Ala Gln Leu
35 40 45

Ala His Gly Ser Ala Thr Gly Arg Val Glu Gly Phe Ser Ser Ile Gln
50 55 60

Glu Leu Tyr Ala Gln Ile Ala Gly Ala Phe Glu Ile Ser Pro Ser Glu
65 70 75 80

Ile Leu Tyr Cys Thr Leu Asn Thr Pro Lys Ile Asp Met Glu Arg Leu
85 90 95

Leu Gly Gly Gln Leu Gly Leu Glu Asp Phe Ile Phe Ala His Val Lys
100 105 110

Gly Ile Glu Lys Glu Val Asn Val Tyr Lys Ser Glu Asp Ser Leu Gly
115 120 125

Leu Thr Ile Thr Asp Asn Gly Val Gly Tyr Ala Phe Ile Lys Arg Ile
130 135 140

Lys Asp Gly Gly Val Ile Asp Ser Val Lys Thr Ile Cys Val Gly Asp
145 150 155 160

His Ile Glu Ser Ile Asn Gly Glu Asn Ile Val Gly Trp Arg His Tyr
165 170 175

Asp Val Ala Lys Lys Leu Lys Glu Leu Lys Lys Glu Glu Leu Phe Thr
180 185 190

Met Lys Leu Ile Glu Pro Lys Lys Ala Phe Glu Ile Glu Leu Arg Ser

195 200 205

Lys Ala Gly Lys Ser Ser Gly Glu Lys Ile Gly Cys Gly Arg Ala Thr
210 215 220

Leu Arg Leu Arg Ser Lys Gly Pro Ala Thr Val Glu Glu Met Pro Ser
225 230 235 240

Glu Thr Lys Ala Lys Ala Ile Glu Lys Ile Asp Asp Val Leu Glu Leu
245 250 255

Tyr Met Gly Ile Arg Asp Ile Asp Leu Ala Thr Thr Met Phe Glu Ala
260 265 270

Gly Lys Asp Lys Val Asn Pro Asp Glu Phe Ala Val Ala Leu Asp Glu
275 280 285

Thr Leu Gly Asp Phe Ala Phe Pro Asp Glu Phe Val Phe Asp Val Trp
290 295 300

Gly Val Ile Gly Asp Ala Lys Arg Arg Gly Leu
305 310 315

<210> 149
<211> 486
<212> PRT
<213> Human

<400> 149

Met Pro Arg Pro Ala Pro Ala Arg Arg Leu Pro Gly Leu Leu Leu Leu
1 5 10 15

Leu Trp Pro Leu Leu Leu Leu Pro Ser Ala Ala Pro Asp Pro Val Ala
20 25 30

Arg Pro Gly Phe Arg Arg Leu Glu Thr Arg Gly Pro Gly Gly Ser Pro
35 40 45

Gly Arg Arg Pro Ser Pro Ala Ala Pro Asp Gly Ala Pro Ala Ser Gly
50 55 60

Thr Ser Glu Pro Gly Arg Ala Arg Gly Ala Gly Val Cys Lys Ser Arg
65 70 75 80

Pro Leu Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Arg Pro

85 90 95

Leu Glu Phe Thr Lys Val Lys Thr Phe Val Ser Arg Ile Ile Asp Thr
100 105 110

Leu Asp Ile Gly Pro Ala Asp Thr Arg Val Ala Val Val Asn Tyr Ala
115 120 125

Ser Thr Val Lys Ile Glu Phe Gln Leu Gln Ala Tyr Thr Asp Lys Gln
130 135 140

Ser Leu Lys Gln Ala Val Gly Arg Ile Thr Pro Leu Ser Thr Gly Thr
145 150 155 160

Met Ser Gly Leu Ala Ile Gln Thr Ala Met Asp Glu Ala Phe Thr Val
165 170 175

Glu Ala Gly Ala Arg Glu Pro Ser Ser Asn Ile Pro Lys Val Ala Ile
180 185 190

Ile Val Thr Asp Gly Arg Pro Gln Asp Gln Val Asn Glu Val Ala Ala
195 200 205

Arg Ala Gln Ala Ser Gly Ile Glu Leu Tyr Ala Val Gly Val Asp Arg
210 215 220

Ala Asp Met Ala Ser Leu Lys Met Met Ala Ser Glu Pro Leu Glu Glu
225 230 235 240

His Val Phe Tyr Val Glu Thr Tyr Gly Val Ile Glu Lys Leu Ser Ser
245 250 255

Arg Phe Gln Glu Thr Phe Cys Ala Leu Asp Pro Cys Val Leu Gly Thr
260 265 270

His Gln Cys Gln His Val Cys Ile Ser Asp Gly Glu Gly Lys His His
275 280 285

Cys Glu Cys Ser Gln Gly Tyr Thr Leu Asn Ala Asp Lys Lys Thr Cys
290 295 300

Ser Ala Leu Asp Arg Cys Ala Leu Asn Thr His Gly Cys Glu His Ile
305 310 315 320

Cys Val Asn Asp Arg Ser Gly Ser Tyr His Cys Glu Cys Tyr Glu Gly
325 330 335

Tyr Thr Leu Asn Glu Asp Arg Lys Thr Cys Ser Ala Gln Asp Lys Cys
340 345 350

Ala Leu Gly Thr His Gly Cys Gln His Ile Cys Val Asn Asp Arg Thr
355 360 365

Gly Ser His His Cys Glu Cys Tyr Glu Gly Tyr Thr Leu Asn Ala Asp
370 375 380

Lys Lys Thr Cys Ser Val Arg Asp Lys Cys Ala Leu Gly Ser His Gly
385 390 395 400

Cys Gln His Ile Cys Val Ser Asp Gly Ala Ala Ser Tyr His Cys Asp
405 410 415

Cys Tyr Pro Gly Tyr Thr Leu Asn Glu Asp Lys Lys Thr Cys Ser Ala
420 425 430

Thr Glu Glu Ala Arg Arg Leu Val Ser Thr Glu Asp Ala Cys Gly Cys
435 440 445

Glu Ala Thr Leu Ala Phe Gln Asp Lys Val Ser Ser Tyr Leu Gln Arg
450 455 460

Leu Asn Thr Lys Leu Asp Asp Ile Leu Glu Lys Leu Lys Ile Asn Glu
465 470 475 480

Tyr Gly Gln Ile His Arg
485

<210> 150
<211> 668
<212> PRT
<213> Human

<400> 150

Met Ala Ala Asn Met Tyr Arg Val Gly Asp Tyr Val Tyr Phe Glu Asn
1 5 10 15

Ser Ser Ser Asn Pro Tyr Leu Val Arg Arg Ile Glu Glu Leu Asn Lys
20 25 30

Thr Ala Asn Gly Asn Val Glu Ala Lys Val Val Cys Leu Phe Arg Arg
35 40 45

Arg Asp Ile Ser Ser Ser Leu Asn Ser Leu Ala Asp Ser Asn Ala Arg
50 55 60

Glu Phe Glu Glu Glu Ser Lys Gln Pro Gly Val Ser Glu Gln Gln Arg
65 70 75 80

His Gln Leu Lys His Arg Glu Leu Phe Leu Ser Arg Gln Phe Glu Ser
85 90 95

Leu Pro Ala Thr His Ile Arg Gly Lys Cys Ser Val Thr Leu Leu Asn
100 105 110

Glu Thr Asp Ile Leu Ser Gln Tyr Leu Glu Lys Glu Asp Cys Phe Phe
115 120 125

Tyr Ser Leu Val Phe Asp Pro Val Gln Lys Thr Leu Leu Ala Asp Gln
130 135 140

Gly Glu Ile Arg Val Gly Cys Lys Tyr Gln Ala Glu Ile Pro Asp Arg
145 150 155 160

Leu Val Glu Gly Glu Ser Asp Asn Arg Asn Gln Gln Lys Met Glu Met
165 170 175

Lys Val Trp Asp Pro Asp Asn Pro Leu Thr Asp Arg Gln Ile Asp Gln
180 185 190

Phe Leu Val Val Ala Arg Ala Val Gly Thr Phe Ala Arg Ala Leu Asp
195 200 205

Cys Ser Ser Ser Ile Arg Gln Pro Ser Leu His Met Ser Ala Ala Ala
210 215 220

Ala Ser Arg Asp Ile Thr Leu Phe His Ala Met Asp Thr Leu Gln Arg
225 230 235 240

Asn Gly Tyr Asp Leu Ala Lys Ala Met Ser Thr Leu Val Pro Gln Gly
245 250 255

Gly Pro Val Leu Cys Arg Asp Glu Met Glu Glu Trp Ser Ala Ser Glu
260 265 270

```
Ala Met Leu Phe Glu Glu Ala Leu Glu Lys Tyr Gly Lys Asp Phe Asn
        275                 280                 285

Asp Ile Arg Gln Asp Phe Leu Pro Trp Lys Ser Leu Ala Ser Ile Val
    290                 295                 300

Gln Phe Tyr Tyr Met Trp Lys Thr Thr Asp Arg Tyr Ile Gln Gln Lys
305                 310                 315                     320

Arg Leu Lys Ala Ala Glu Ala Asp Ser Lys Leu Lys Gln Val Tyr Ile
                325                 330                 335

Pro Thr Tyr Thr Lys Pro Asn Pro Asn Gln Ile Ile Ser Val Gly Ser
            340                 345                 350

Lys Pro Gly Met Asn Gly Ala Gly Phe Gln Lys Gly Leu Thr Cys Glu
        355                 360                 365

Ser Cys His Thr Thr Gln Ser Ala Gln Trp Tyr Ala Trp Gly Pro Pro
    370                 375                 380

Asn Met Gln Cys Arg Leu Cys Ala Ser Cys Trp Ile Tyr Trp Lys Lys
385                 390                 395                     400

Tyr Gly Gly Leu Lys Thr Pro Thr Gln Leu Glu Gly Ala Thr Arg Gly
                405                 410                 415

Thr Thr Glu Pro His Ser Arg Gly His Leu Ser Arg Pro Glu Ala Gln
            420                 425                 430

Ser Leu Ser Pro Tyr Thr Thr Ser Ala Asn Arg Ala Lys Leu Leu Ala
        435                 440                 445

Lys Asn Arg Gln Thr Phe Leu Leu Gln Thr Thr Lys Leu Thr Arg Leu
    450                 455                 460

Ala Arg Arg Met Cys Arg Asp Leu Leu Gln Pro Arg Arg Ala Ala Arg
465                 470                 475                     480

Arg Pro Tyr Ala Pro Ile Asn Ala Asn Ala Ile Lys Ala Glu Cys Ser
                485                 490                 495

Ile Arg Leu Pro Lys Ala Ala Lys Thr Pro Leu Lys Ile His Pro Leu
            500                 505                 510
```

Val Arg Leu Pro Leu Ala Thr Ile Val Lys Asp Leu Val Ala Gln Ala
515 520 525

Pro Leu Lys Pro Lys Thr Pro Arg Gly Thr Lys Thr Pro Ile Asn Arg
530 535 540

Asn Gln Leu Ser Gln Asn Arg Gly Leu Gly Gly Ile Met Val Lys Arg
545 550 555 560

Ala Tyr Glu Thr Met Ala Gly Ala Gly Val Pro Phe Ser Ala Asn Gly
565 570 575

Arg Pro Leu Ala Ser Gly Ile Arg Ser Ser Ser Gln Pro Ala Ala Lys
580 585 590

Arg Gln Lys Leu Asn Pro Ala Asp Ala Pro Asn Pro Val Val Phe Val
595 600 605

Ala Thr Lys Asp Thr Arg Ala Leu Arg Lys Ala Leu Thr His Leu Glu
610 615 620

Met Arg Arg Ala Ala Arg Arg Pro Asn Leu Pro Leu Lys Val Lys Pro
625 630 635 640

Thr Leu Ile Ala Val Arg Pro Pro Val Pro Leu Pro Ala Pro Ser His
645 650 655

Pro Ala Ser Thr Asn Glu Pro Ile Val Leu Glu Asp
660 665

<210> 151
<211> 5179
<212> PRT
<213> Human

<400> 151

Met Gly Leu Pro Leu Ala Arg Leu Ala Ala Val Cys Leu Ala Leu Ser
1 5 10 15

Leu Ala Gly Gly Ser Glu Leu Gln Thr Glu Gly Arg Thr Arg Tyr His
20 25 30

Gly Arg Asn Val Cys Ser Thr Trp Gly Asn Phe His Tyr Lys Thr Phe
35 40 45

Asp Gly Asp Val Phe Arg Phe Pro Gly Leu Cys Asp Tyr Asn Phe Ala
50 55 60

Ser Asp Cys Arg Gly Ser Tyr Lys Glu Phe Ala Val His Leu Lys Arg
65 70 75 80

Gly Pro Gly Gln Ala Glu Ala Pro Ala Gly Val Glu Ser Ile Leu Leu
85 90 95

Thr Ile Lys Asp Asp Thr Ile Tyr Leu Thr Arg His Leu Ala Val Leu
100 105 110

Asn Gly Ala Val Val Ser Thr Pro His Tyr Ser Pro Gly Leu Leu Ile
115 120 125

Glu Lys Ser Asp Ala Tyr Thr Lys Val Tyr Ser Arg Ala Gly Leu Thr
130 135 140

Leu Met Trp Asn Arg Glu Asp Ala Leu Met Leu Glu Leu Asp Thr Lys
145 150 155 160

Phe Arg Asn His Thr Cys Gly Leu Cys Gly Asp Tyr Asn Gly Leu Gln
165 170 175

Ser Tyr Ser Glu Phe Leu Ser Asp Gly Val Leu Phe Ser Pro Leu Glu
180 185 190

Phe Gly Asn Met Gln Lys Ile Asn Gln Pro Asp Val Val Cys Glu Asp
195 200 205

Pro Glu Glu Glu Val Ala Pro Ala Ser Cys Ser Glu His Arg Ala Glu
210 215 220

Cys Glu Arg Leu Leu Thr Ala Glu Ala Phe Ala Asp Cys Gln Asp Leu
225 230 235 240

Val Pro Leu Glu Pro Tyr Leu Arg Ala Cys Gln Gln Asp Arg Cys Arg
245 250 255

Cys Pro Gly Gly Asp Thr Cys Val Cys Ser Thr Val Ala Glu Phe Ser
260 265 270

Arg Gln Cys Ser His Ala Gly Gly Arg Pro Gly Asn Trp Arg Thr Ala

275 280 285

Thr Leu Cys Pro Lys Thr Cys Pro Gly Asn Leu Val Tyr Leu Glu Ser
290 295 300

Gly Ser Pro Cys Met Asp Thr Cys Ser His Leu Glu Val Ser Ser Leu
305 310 315 320

Cys Glu Glu His Arg Met Asp Gly Cys Phe Cys Pro Glu Gly Thr Val
325 330 335

Tyr Asp Asp Ile Gly Asp Ser Gly Cys Val Pro Val Ser Gln Cys His
340 345 350

Cys Arg Leu His Gly His Leu Tyr Thr Pro Gly Gln Glu Ile Thr Asn
355 360 365

Asp Cys Glu Gln Cys Val Cys Asn Ala Gly Arg Trp Val Cys Lys Asp
370 375 380

Leu Pro Cys Pro Gly Thr Cys Ala Leu Glu Gly Gly Ser His Ile Thr
385 390 395 400

Thr Phe Asp Gly Lys Thr Tyr Thr Phe His Gly Asp Cys Tyr Tyr Val
405 410 415

Leu Ala Lys Gly Asp His Asn Asp Ser Tyr Ala Leu Leu Gly Glu Leu
420 425 430

Ala Pro Cys Gly Ser Thr Asp Lys Gln Thr Cys Leu Lys Thr Val Val
435 440 445

Leu Leu Ala Asp Lys Lys Lys Asn Ala Val Val Phe Lys Ser Asp Gly
450 455 460

Ser Val Leu Leu Asn Gln Leu Gln Val Asn Leu Pro His Val Thr Ala
465 470 475 480

Ser Phe Ser Val Phe Arg Pro Ser Ser Tyr His Ile Met Val Ser Met
485 490 495

Ala Ile Gly Val Arg Leu Gln Val Gln Leu Ala Pro Val Met Gln Leu
500 505 510

Phe Val Thr Leu Asp Gln Ala Ser Gln Gly Gln Val Gln Gly Leu Cys
515 520 525

Gly Asn Phe Asn Gly Leu Glu Gly Asp Asp Phe Lys Thr Ala Ser Gly
530 535 540

Leu Val Glu Ala Thr Gly Ala Gly Phe Ala Asn Thr Trp Lys Ala Gln
545 550 555 560

Ser Thr Cys His Asp Lys Leu Asp Trp Leu Asp Asp Pro Cys Ser Leu
565 570 575

Asn Ile Glu Ser Ala Asn Tyr Ala Glu His Trp Cys Ser Leu Leu Lys
580 585 590

Lys Thr Glu Thr Pro Phe Gly Arg Cys His Ser Ala Val Asp Pro Ala
595 600 605

Glu Tyr Tyr Lys Arg Cys Lys Tyr Asp Thr Cys Asn Cys Gln Asn Asn
610 615 620

Glu Asp Cys Leu Cys Ala Ala Leu Ser Ser Tyr Ala Arg Ala Cys Thr
625 630 635 640

Ala Lys Gly Val Met Leu Trp Gly Trp Arg Glu His Val Cys Asn Lys
645 650 655

Asp Val Gly Ser Cys Pro Asn Ser Gln Val Phe Leu Tyr Asn Leu Thr
660 665 670

Thr Cys Gln Gln Thr Cys Arg Ser Leu Ser Glu Ala Asp Ser His Cys
675 680 685

Leu Glu Gly Phe Ala Pro Val Asp Gly Cys Gly Cys Pro Asp His Thr
690 695 700

Phe Leu Asp Glu Lys Gly Arg Cys Val Pro Leu Ala Lys Cys Ser Cys
705 710 715 720

Tyr His Arg Gly Leu Tyr Leu Glu Ala Gly Asp Val Val Val Arg Gln
725 730 735

Glu Glu Arg Cys Val Cys Arg Asp Gly Arg Leu His Cys Arg Gln Ile
740 745 750

```
Arg Leu Ile Gly Gln Ser Cys Thr Ala Pro Lys Ile His Met Asp Cys
        755                 760                 765

Ser Asn Leu Thr Ala Leu Ala Thr Ser Lys Pro Arg Ala Leu Ser Cys
    770                 775                 780

Gln Thr Leu Ala Ala Gly Tyr Tyr His Thr Glu Cys Val Ser Gly Cys
785                 790                 795                 800

Val Cys Pro Asp Gly Leu Met Asp Asp Gly Arg Gly Gly Cys Val Val
                805                 810                 815

Glu Lys Glu Cys Pro Cys Val His Asn Asn Asp Leu Tyr Ser Ser Gly
            820                 825                 830

Ala Lys Ile Lys Val Asp Cys Asn Thr Cys Thr Cys Lys Arg Gly Arg
        835                 840                 845

Trp Val Cys Thr Gln Ala Val Cys His Gly Thr Cys Ser Ile Tyr Gly
    850                 855                 860

Ser Gly His Tyr Ile Thr Phe Asp Gly Lys Tyr Tyr Asp Phe Asp Gly
865                 870                 875                 880

His Cys Ser Tyr Val Ala Val Gln Asp Tyr Cys Gly Gln Asn Ser Ser
                885                 890                 895

Leu Gly Ser Phe Ser Ile Ile Thr Glu Asn Val Pro Cys Gly Thr Thr
            900                 905                 910

Gly Val Thr Cys Ser Lys Ala Ile Lys Ile Phe Met Gly Arg Thr Glu
        915                 920                 925

Leu Lys Leu Glu Asp Lys His Arg Val Val Ile Gln Arg Asp Glu Gly
    930                 935                 940

His His Val Ala Tyr Thr Thr Arg Glu Val Gly Gln Tyr Leu Val Val
945                 950                 955                 960

Glu Ser Ser Thr Gly Ile Ile Val Ile Trp Asp Lys Arg Thr Thr Val
                965                 970                 975

Phe Ile Lys Leu Ala Pro Ser Tyr Lys Gly Thr Val Cys Gly Leu Cys
            980                 985                 990
```

PCT/US04/00368

Gly Asn Phe Asp His Arg Ser Asn Asn Asp Phe Thr Thr Arg Asp His
995 1000 1005

Met Val Val Ser Ser Glu Leu Asp Phe Gly Asn Ser Trp Lys Glu
1010 1015 1020

Ala Pro Thr Cys Pro Asp Val Ser Thr Asn Pro Glu Pro Cys Ser
1025 1030 1035

Leu Asn Pro His Arg Arg Ser Trp Ala Glu Lys Gln Cys Ser Ile
1040 1045 1050

Leu Lys Ser Ser Val Phe Ser Ile Cys His Ser Lys Val Asp Pro
1055 1060 1065

Lys Pro Phe Tyr Glu Ala Cys Val His Asp Ser Cys Ser Cys Asp
1070 1075 1080

Thr Gly Gly Asp Cys Glu Cys Phe Cys Ser Ala Val Ala Ser Tyr
1085 1090 1095

Ala Gln Glu Cys Thr Lys Glu Gly Ala Cys Val Phe Trp Arg Thr
1100 1105 1110

Pro Asp Leu Cys Pro Ile Phe Cys Asp Tyr Tyr Asn Pro Pro His
1115 1120 1125

Glu Cys Glu Trp His Tyr Glu Pro Cys Gly Asn Arg Ser Phe Glu
1130 1135 1140

Thr Cys Arg Thr Ile Asn Gly Ile His Ser Asn Ile Ser Val Ser
1145 1150 1155

Tyr Leu Glu Gly Cys Tyr Pro Arg Cys Pro Lys Asp Arg Pro Ile
1160 1165 1170

Tyr Glu Glu Asp Leu Lys Lys Cys Val Thr Ala Asp Lys Cys Gly
1175 1180 1185

Cys Tyr Val Glu Asp Thr His Tyr Pro Pro Gly Ala Ser Val Pro
1190 1195 1200

Thr Glu Glu Thr Cys Lys Ser Cys Val Cys Thr Asn Ser Ser Gln

1205 1210 1215

Val Val Cys Arg Pro Glu Glu Gly Lys Ile Leu Asn Gln Thr Gln
1220 1225 1230

Asp Gly Ala Phe Cys Tyr Trp Glu Ile Cys Gly Pro Asn Gly Thr
1235 1240 1245

Val Glu Lys His Phe Asn Ile Cys Ser Ile Thr Thr Arg Pro Ser
1250 1255 1260

Thr Leu Thr Thr Phe Thr Thr Ile Thr Leu Pro Thr Thr Pro Thr
1265 1270 1275

Ser Phe Thr Thr Thr Thr Thr Thr Thr Thr Pro Thr Ser Ser Thr
1280 1285 1290

Val Leu Ser Thr Thr Pro Lys Leu Cys Cys Leu Trp Ser Asp Trp
1295 1300 1305

Ile Asn Glu Asp His Pro Ser Ser Gly Ser Asp Asp Gly Asp Arg
1310 1315 1320

Glu Pro Phe Asp Gly Val Cys Gly Ala Pro Glu Asp Ile Glu Cys
1325 1330 1335

Arg Ser Val Lys Asp Pro His Leu Ser Leu Glu Gln His Gly Gln
1340 1345 1350

Lys Val Gln Cys Asp Val Ser Val Gly Phe Ile Cys Lys Asn Glu
1355 1360 1365

Asp Gln Phe Gly Asn Gly Pro Phe Gly Leu Cys Tyr Asp Tyr Lys
1370 1375 1380

Ile Arg Val Asn Cys Cys Trp Pro Met Asp Lys Cys Ile Thr Thr
1385 1390 1395

Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro Pro Pro Thr Thr Thr
1400 1405 1410

Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr
1415 1420 1425

Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Ile Thr
1430 1435 1440

Thr Thr Thr Thr Pro Leu Pro Thr Thr Thr Pro Ser Pro Pro Ile
1445 1450 1455

Ser Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro
1460 1465 1470

Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr
1475 1480 1485

Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro
1490 1495 1500

Met Thr Thr Pro Ile Thr Pro Pro Ala Ser Thr Thr Thr Leu Pro
1505 1510 1515

Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Thr Thr Thr Pro
1520 1525 1530

Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Pro Ile Thr
1535 1540 1545

Pro Pro Thr Ser Thr Thr Thr Leu Pro Pro Thr Thr Thr Pro Ser
1550 1555 1560

Pro Pro Pro Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro
1565 1570 1575

Ser Pro Pro Thr Thr Thr Thr Pro Ser Pro Pro Thr Ile Thr Thr
1580 1585 1590

Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr
1595 1600 1605

Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr
1610 1615 1620

Thr Pro Ile Thr Pro Pro Thr Ser Thr Thr Thr Leu Pro Pro Thr
1625 1630 1635

Thr Thr Pro Ser Pro Pro Pro Thr Thr Thr Thr Thr Pro Pro Pro
1640 1645 1650

Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Thr Pro Ser Pro Pro
1655 1660 1665

Ile Thr Thr Thr Thr Thr Pro Pro Pro Thr Thr Thr Pro Ser Ser
1670 1675 1680

Pro Ile Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr Met Thr Thr
1685 1690 1695

Pro Ser Pro Thr Thr Thr Pro Ser Ser Pro Ile Thr Thr Thr Thr
1700 1705 1710

Thr Pro Ser Ser Thr Thr Thr Pro Ser Pro Pro Pro Thr Thr Met
1715 1720 1725

Thr Thr Pro Ser Pro Thr Thr Thr Pro Ser Pro Pro Thr Thr Thr
1730 1735 1740

Met Thr Thr Leu Pro Pro Thr Thr Thr Ser Ser Pro Leu Thr Thr
1745 1750 1755

Thr Pro Leu Pro Pro Ser Ile Thr Pro Pro Thr Phe Ser Pro Phe
1760 1765 1770

Ser Thr Thr Thr Pro Thr Thr Pro Cys Val Pro Leu Cys Asn Trp
1775 1780 1785

Thr Gly Trp Leu Asp Ser Gly Lys Pro Asn Phe His Lys Pro Gly
1790 1795 1800

Gly Asp Thr Glu Leu Ile Gly Asp Val Cys Gly Pro Gly Trp Ala
1805 1810 1815

Ala Asn Ile Ser Cys Arg Ala Thr Met Tyr Pro Asp Val Pro Ile
1820 1825 1830

Gly Gln Leu Gly Gln Thr Val Val Cys Asp Val Ser Val Gly Leu
1835 1840 1845

Ile Cys Lys Asn Glu Asp Gln Lys Pro Gly Gly Val Ile Pro Met
1850 1855 1860

Ala Phe Cys Leu Asn Tyr Glu Ile Asn Val Gln Cys Cys Glu Cys
1865 1870 1875

Val Thr Gln Pro Thr Thr Met Thr Thr Thr Thr Thr Glu Asn Pro
1880 1885 1890

Thr Pro Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
1895 1900 1905

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
1910 1915 1920

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
1925 1930 1935

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
1940 1945 1950

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
1955 1960 1965

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
1970 1975 1980

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
1985 1990 1995

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
2000 2005 2010

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
2015 2020 2025

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
2030 2035 2040

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
2045 2050 2055

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
2060 2065 2070

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
2075 2080 2085

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro

2090 2095 2100

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
2105 2110 2115

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2120 2125 2130

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
2135 2140 2145

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
2150 2155 2160

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
2165 2170 2175

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
2180 2185 2190

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
2195 2200 2205

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
2210 2215 2220

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
2225 2230 2235

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
2240 2245 2250

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
2255 2260 2265

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
2270 2275 2280

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
2285 2290 2295

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
2300 2305 2310

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
2315 2320 2325

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
2330 2335 2340

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
2345 2350 2355

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
2360 2365 2370

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
2375 2380 2385

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
2390 2395 2400

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
2405 2410 2415

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
2420 2425 2430

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
2435 2440 2445

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
2450 2455 2460

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2465 2470 2475

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
2480 2485 2490

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
2495 2500 2505

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
2510 2515 2520

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
2525 2530 2535

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
2540 2545 2550

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
2555 2560 2565

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
2570 2575 2580

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
2585 2590 2595

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
2600 2605 2610

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
2615 2620 2625

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
2630 2635 2640

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
2645 2650 2655

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
2660 2665 2670

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
2675 2680 2685

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
2690 2695 2700

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
2705 2710 2715

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
2720 2725 2730

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
2735 2740 2745

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
2750 2755 2760

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
2765 2770 2775

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
2780 2785 2790

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
2795 2800 2805

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
2810 2815 2820

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
2825 2830 2835

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
2840 2845 2850

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
2855 2860 2865

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
2870 2875 2880

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
2885 2890 2895

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
2900 2905 2910

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
2915 2920 2925

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
2930 2935 2940

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
2945 2950 2955

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
2960 2965 2970

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val

2975 2980 2985

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
2990 2995 3000

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
3005 3010 3015

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
3020 3025 3030

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
3035 3040 3045

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
3050 3055 3060

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
3065 3070 3075

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
3080 3085 3090

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
3095 3100 3105

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
3110 3115 3120

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
3125 3130 3135

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
3140 3145 3150

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
3155 3160 3165

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
3170 3175 3180

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
3185 3190 3195

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
3200 3205 3210

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
3215 3220 3225

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
3230 3235 3240

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
3245 3250 3255

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
3260 3265 3270

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
3275 3280 3285

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
3290 3295 3300

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
3305 3310 3315

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
3320 3325 3330

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
3335 3340 3345

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
3350 3355 3360

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
3365 3370 3375

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
3380 3385 3390

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
3395 3400 3405

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
3410 3415 3420

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
3425 3430 3435

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
3440 3445 3450

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
3455 3460 3465

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
3470 3475 3480

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
3485 3490 3495

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
3500 3505 3510

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr
3515 3520 3525

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
3530 3535 3540

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
3545 3550 3555

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
3560 3565 3570

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
3575 3580 3585

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
3590 3595 3600

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
3605 3610 3615

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
3620 3625 3630

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
3635 3640 3645

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
3650 3655 3660

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
3665 3670 3675

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
3680 3685 3690

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
3695 3700 3705

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
3710 3715 3720

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
3725 3730 3735

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
3740 3745 3750

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
3755 3760 3765

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
3770 3775 3780

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
3785 3790 3795

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
3800 3805 3810

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
3815 3820 3825

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
3830 3835 3840

Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr
3845 3850 3855

Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr

3860 3865 3870

Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr
3875 3880 3885

Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr
3890 3895 3900

Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln
3905 3910 3915

Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro
3920 3925 3930

Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile
3935 3940 3945

Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr
3950 3955 3960

Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr
3965 3970 3975

Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro
3980 3985 3990

Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly
3995 4000 4005

Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val
4010 4015 4020

Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr
4025 4030 4035

Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro Thr
4040 4045 4050

Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr
4055 4060 4065

Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr Thr
4070 4075 4080

Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr Pro
4085 4090 4095

Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr Thr
4100 4105 4110

Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro Thr
4115 4120 4125

Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro Thr
4130 4135 4140

Pro Thr Gly Thr Gln Thr Pro Thr Thr Thr Pro Ile Thr Thr Thr
4145 4150 4155

Thr Thr Val Thr Pro Thr Pro Thr Pro Thr Gly Thr Gln Thr Pro
4160 4165 4170

Thr Thr Thr Pro Ile Thr Thr Thr Thr Thr Val Thr Pro Thr Pro
4175 4180 4185

Thr Pro Thr Gly Thr Gln Thr Gly Pro Pro Thr His Thr Ser Thr
4190 4195 4200

Ala Pro Ile Ala Glu Leu Thr Thr Ser Asn Pro Pro Pro Glu Ser
4205 4210 4215

Ser Thr Pro Gln Thr Ser Arg Ser Thr Ser Ser Pro Leu Thr Glu
4220 4225 4230

Ser Thr Thr Leu Leu Ser Thr Leu Pro Pro Ala Ile Glu Met Thr
4235 4240 4245

Ser Thr Ala Pro Pro Ser Thr Pro Thr Ala Pro Thr Thr Thr Ser
4250 4255 4260

Gly Gly His Thr Leu Ser Pro Pro Pro Ser Thr Thr Thr Ser Pro
4265 4270 4275

Pro Gly Thr Pro Thr Arg Gly Thr Thr Thr Gly Ser Ser Ser Ala
4280 4285 4290

Pro Thr Pro Ser Thr Val Gln Thr Thr Thr Thr Ser Ala Trp Thr
4295 4300 4305

Pro Thr Pro Thr Pro Leu Ser Thr Pro Ser Ile Ile Arg Thr Thr
4310 4315 4320

Gly Leu Arg Pro Tyr Pro Ser Ser Val Leu Ile Cys Cys Val Leu
4325 4330 4335

Asn Asp Thr Tyr Tyr Ala Pro Gly Glu Glu Val Tyr Asn Gly Thr
4340 4345 4350

Tyr Gly Asp Thr Cys Tyr Phe Val Asn Cys Ser Leu Ser Cys Thr
4355 4360 4365

Leu Glu Phe Tyr Asn Trp Ser Cys Pro Ser Thr Pro Ser Pro Thr
4370 4375 4380

Pro Thr Pro Ser Lys Ser Thr Pro Thr Pro Ser Lys Pro Ser Ser
4385 4390 4395

Thr Pro Ser Lys Pro Thr Pro Gly Thr Lys Pro Pro Glu Cys Pro
4400 4405 4410

Asp Phe Asp Pro Pro Arg Gln Glu Asn Glu Thr Trp Trp Leu Cys
4415 4420 4425

Asp Cys Phe Met Ala Thr Cys Lys Tyr Asn Asn Thr Val Glu Ile
4430 4435 4440

Val Lys Val Glu Cys Glu Pro Pro Pro Met Pro Thr Cys Ser Asn
4445 4450 4455

Gly Leu Gln Pro Val Arg Val Glu Asp Pro Asp Gly Cys Cys Trp
4460 4465 4470

His Trp Glu Cys Asp Cys Tyr Cys Thr Gly Trp Gly Asp Pro His
4475 4480 4485

Tyr Val Thr Phe Asp Gly Leu Tyr Tyr Ser Tyr Gln Gly Asn Cys
4490 4495 4500

Thr Tyr Val Leu Val Glu Glu Ile Ser Pro Ser Val Asp Asn Phe
4505 4510 4515

Gly Val Tyr Ile Asp Asn Tyr His Cys Asp Pro Asn Asp Lys Val
4520 4525 4530

Ser Cys Pro Arg Thr Leu Ile Val Arg His Glu Thr Gln Glu Val
4535 4540 4545

Leu Ile Lys Thr Val His Met Met Pro Met Gln Val Gln Val Gln
4550 4555 4560

Val Asn Arg Gln Ala Val Ala Leu Pro Tyr Lys Lys Tyr Gly Leu
4565 4570 4575

Glu Val Tyr Gln Ser Gly Ile Asn Tyr Val Val Asp Ile Pro Glu
4580 4585 4590

Leu Gly Val Leu Val Ser Tyr Asn Gly Leu Ser Phe Ser Val Arg
4595 4600 4605

Leu Pro Tyr His Arg Phe Gly Asn Asn Thr Lys Gly Gln Cys Gly
4610 4615 4620

Thr Cys Thr Asn Thr Thr Ser Asp Asp Cys Ile Leu Pro Ser Gly
4625 4630 4635

Glu Ile Val Ser Asn Cys Glu Ala Ala Ala Asp Gln Trp Leu Val
4640 4645 4650

Asn Asp Pro Ser Lys Pro His Cys Pro His Ser Ser Ser Thr Thr
4655 4660 4665

Lys Arg Pro Ala Val Thr Val Pro Gly Gly Gly Lys Thr Thr Pro
4670 4675 4680

His Lys Asp Cys Thr Pro Ser Pro Leu Cys Gln Leu Ile Lys Asp
4685 4690 4695

Ser Leu Phe Ala Gln Cys His Ala Leu Val Pro Pro Gln His Tyr
4700 4705 4710

Tyr Asp Ala Cys Val Phe Asp Ser Cys Phe Met Pro Gly Ser Ser
4715 4720 4725

Leu Glu Cys Ala Ser Leu Gln Ala Tyr Ala Ala Leu Cys Ala Gln
4730 4735 4740

Gln Asn Ile Cys Leu Asp Trp Arg Asn His Thr His Gly Ala Cys

4745 4750 4755

Leu Val Glu Cys Pro Ser His Arg Glu Tyr Gln Ala Cys Gly Pro
4760 4765 4770

Ala Glu Glu Pro Thr Cys Lys Ser Ser Ser Ser Gln Gln Asn Asn
4775 4780 4785

Thr Val Leu Val Glu Gly Cys Phe Cys Pro Glu Gly Thr Met Asn
4790 4795 4800

Tyr Ala Pro Gly Phe Asp Val Cys Val Lys Thr Cys Gly Cys Val
4805 4810 4815

Gly Pro Asp Asn Val Pro Arg Glu Phe Gly Glu His Phe Glu Phe
4820 4825 4830

Asp Cys Lys Asn Cys Val Cys Leu Glu Gly Gly Ser Gly Ile Ile
4835 4840 4845

Cys Gln Pro Lys Arg Cys Ser Gln Lys Pro Val Thr His Cys Val
4850 4855 4860

Glu Asp Gly Thr Tyr Leu Ala Thr Glu Val Asn Pro Ala Asp Thr
4865 4870 4875

Cys Cys Asn Ile Thr Val Cys Lys Cys Asn Thr Ser Leu Cys Lys
4880 4885 4890

Glu Lys Pro Ser Val Cys Pro Leu Gly Phe Glu Val Lys Ser Lys
4895 4900 4905

Met Val Pro Gly Arg Cys Cys Pro Phe Tyr Trp Cys Glu Ser Lys
4910 4915 4920

Gly Val Cys Val His Gly Asn Ala Glu Tyr Gln Pro Gly Ser Pro
4925 4930 4935

Val Tyr Ser Ser Lys Cys Gln Asp Cys Val Cys Thr Asp Lys Val
4940 4945 4950

Asp Asn Asn Thr Leu Leu Asn Val Ile Ala Cys Thr His Val Pro
4955 4960 4965

Cys Asn Thr Ser Cys Ser Pro Gly Phe Glu Leu Met Glu Ala Pro
4970 4975 4980

Gly Glu Cys Cys Lys Lys Cys Glu Gln Thr His Cys Ile Ile Lys
4985 4990 4995

Arg Pro Asp Asn Gln His Val Ile Leu Lys Pro Gly Asp Phe Lys
5000 5005 5010

Ser Asp Pro Lys Asn Asn Cys Thr Phe Phe Ser Cys Val Lys Ile
5015 5020 5025

His Asn Gln Leu Ile Ser Ser Val Ser Asn Ile Thr Cys Pro Asn
5030 5035 5040

Phe Asp Ala Ser Ile Cys Ile Pro Gly Ser Ile Thr Phe Met Pro
5045 5050 5055

Asn Gly Cys Cys Lys Thr Cys Thr Pro Arg Asn Glu Thr Arg Val
5060 5065 5070

Pro Cys Ser Thr Val Pro Val Thr Thr Glu Val Ser Tyr Ala Gly
5075 5080 5085

Cys Thr Lys Thr Val Leu Met Asn His Cys Ser Gly Ser Cys Gly
5090 5095 5100

Thr Phe Val Met Tyr Ser Ala Lys Ala Gln Ala Leu Asp His Ser
5105 5110 5115

Cys Ser Cys Cys Lys Glu Glu Lys Thr Ser Gln Arg Glu Val Val
5120 5125 5130

Leu Ser Cys Pro Asn Gly Gly Ser Leu Thr His Thr Tyr Thr His
5135 5140 5145

Ile Glu Ser Cys Gln Cys Gln Asp Thr Val Cys Gly Leu Pro Thr
5150 5155 5160

Gly Thr Ser Arg Arg Ala Arg Arg Ser Pro Arg His Leu Gly Ser
5165 5170 5175

Gly

<210> 152
<211> 878
<212> PRT
<213> Human

<400> 152

Thr Ile Tyr Ser Thr Val Ser Ser Ser Thr Thr Ala Ile Thr Ser Pro
1 5 10 15

Phe Thr Thr Ala Glu Thr Gly Val Thr Ser Thr Pro Ser Ser Pro Ser
20 25 30

Ser Leu Ser Thr Asp Ile Pro Thr Thr Ser Leu Arg Thr Leu Thr Pro
35 40 45

Leu Ser Leu Ser Thr Ser Thr Ser Leu Thr Thr Thr Thr Asp Leu Pro
50 55 60

Ser Ile Pro Thr Asp Ile Ser Ser Leu Pro Thr Pro Ile His Ile Ile
65 70 75 80

Ser Ser Ser Pro Ser Ile Gln Ser Thr Glu Thr Ser Ser Leu Val Gly
85 90 95

Thr Thr Ser Pro Thr Met Ser Thr Val Arg Ala Thr Leu Arg Ser Thr
100 105 110

Glu Asn Thr Pro Ile Ser Ser Phe Ser Thr Ser Ile Val Val Thr Pro
115 120 125

Glu Thr Pro Thr Thr Gln Ala Pro Pro Val Leu Met Ser Ala Thr Gly
130 135 140

Thr Gln Thr Ser Pro Val Pro Thr Thr Val Thr Phe Gly Ser Met Asp
145 150 155 160

Ser Ser Thr Ser Thr Leu His Thr Leu Thr Pro Ser Thr Ala Leu Ser
165 170 175

Lys Ile Met Ser Thr Ser Gln Phe Pro Ile Pro Ser Thr His Ser Ser
180 185 190

Thr Leu Gln Thr Thr Pro Ser Ile Pro Ser Leu Gln Thr Ser Leu Thr
195 200 205

Ser Thr Ser Glu Phe Thr Thr Glu Ser Phe Thr Arg Gly Ser Thr Ser
210 215 220

Thr Asn Ala Ile Leu Thr Ser Phe Ser Thr Ile Ile Trp Ser Ser Thr
225 230 235 240

Pro Thr Ile Ile Met Ser Ser Ser Pro Ser Ser Ala Ser Ile Thr Pro
245 250 255

Val Phe Ala Thr Thr Ile His Ser Val Pro Ser Ser Pro Tyr Ile Phe
260 265 270

Ser Thr Glu Asn Val Gly Ser Ala Ser Ile Thr Ala Phe Pro Ser Leu
275 280 285

Ser Ser Ser Ser Thr Thr Ser Thr Ser Pro Thr Ser Ser Ser Leu Thr
290 295 300

Thr Ala Leu Thr Glu Ile Thr Pro Phe Ser Tyr Ile Ser Leu Pro Ser
305 310 315 320

Thr Thr Pro Cys Pro Gly Thr Ile Thr Ile Thr Ile Val Pro Ala Ser
325 330 335

Pro Thr Asp Pro Cys Val Glu Met Asp Pro Ser Thr Glu Ala Thr Ser
340 345 350

Pro Pro Thr Thr Pro Leu Thr Val Phe Pro Phe Thr Thr Glu Met Val
355 360 365

Thr Cys Pro Ser Ser Ile Ser Met Gln Thr Thr Leu Ala Thr His Met
370 375 380

Asp Thr Ser Ser Met Thr Pro Glu Ser Glu Ser Ser Ile Ile Pro Asn
385 390 395 400

Ala Ser Ser Ser Thr Gly Thr Gly Thr Val Pro Thr Asn Thr Val Phe
405 410 415

Thr Ser Thr Arg Leu Pro Thr Ser Glu Thr Trp Leu Ser Asn Asn Ser
420 425 430

Val Ile Pro Thr Pro Leu Pro Gly Val Ser Thr Ile Pro Leu Thr Met
435 440 445

```
Lys Pro Ser Ser Ser Leu Pro Thr Ile Leu Arg Thr Ser Ser Lys Ser
    450                 455                 460

Thr His Pro Ser Pro Pro Thr Ala Arg Thr Ser Glu Thr Ser Val Ala
465                 470                 475                 480

Thr Thr Gln Thr Pro Thr Thr Leu Thr Thr Arg Arg Thr Thr Pro Ile
                485                 490                 495

Thr Ser Trp Met Thr Thr Gln Ser Thr Leu Thr Thr Thr Ala Gly Thr
            500                 505                 510

Cys Asp Asn Gly Gly Thr Trp Glu Gln Gly Gln Cys Ala Cys Leu Pro
        515                 520                 525

Gly Phe Ser Gly Asp Arg Cys Gln Leu Gln Thr Arg Cys Gln Asn Gly
    530                 535                 540

Gly Gln Trp Asp Gly Leu Lys Cys Gln Cys Pro Ser Thr Phe Tyr Gly
545                 550                 555                 560

Ser Ser Cys Glu Phe Ala Val Glu Gln Val Asp Leu Asp Val Val Glu
                565                 570                 575

Thr Glu Val Gly Met Glu Val Ser Val Asp Gln Gln Phe Ser Pro Asp
            580                 585                 590

Leu Asn Asp Asn Thr Ser Gln Ala Tyr Arg Asp Phe Asn Lys Thr Phe
        595                 600                 605

Trp Asn Gln Met Gln Lys Ile Phe Ala Asp Met Gln Gly Phe Thr Phe
    610                 615                 620

Lys Gly Val Glu Ile Leu Ser Leu Arg Asn Gly Ser Ile Val Val Asp
625                 630                 635                 640

Tyr Leu Val Leu Leu Glu Met Pro Phe Ser Pro Gln Leu Glu Ser Glu
                645                 650                 655

Tyr Glu Gln Val Lys Thr Thr Leu Lys Glu Gly Leu Gln Asn Ala Ser
            660                 665                 670

Gln Asp Ala Asn Ser Cys Gln Asp Ser Gln Thr Leu Cys Phe Lys Pro
```

675 680 685

Asp Ser Ile Lys Val Asn Asn Asn Ser Lys Thr Glu Leu Thr Pro Glu
690 695 700

Ala Ile Cys Arg Arg Ala Ala Pro Thr Gly Tyr Glu Glu Phe Tyr Phe
705 710 715 720

Pro Leu Val Glu Ala Thr Arg Leu Arg Cys Val Thr Lys Cys Thr Ser
725 730 735

Gly Val Asp Asn Ala Ile Asp Cys His Gln Gly Gln Cys Val Leu Glu
740 745 750

Thr Ser Gly Pro Ala Cys Arg Cys Tyr Ser Thr Asp Thr His Trp Phe
755 760 765

Ser Gly Pro Arg Cys Glu Val Ala Val His Trp Arg Ala Leu Val Gly
770 775 780

Gly Leu Thr Ala Gly Ala Ala Leu Leu Val Leu Leu Leu Leu Ala Leu
785 790 795 800

Gly Val Arg Ala Val Arg Ser Gly Trp Trp Gly Gly Gln Arg Arg Gly
805 810 815

Arg Ser Trp Asp Gln Asp Arg Lys Trp Phe Glu Thr Trp Asp Glu Glu
820 825 830

Val Val Gly Thr Phe Ser Asn Trp Gly Phe Glu Asp Asp Gly Thr Asp
835 840 845

Lys Asp Thr Asn Phe His Val Ala Leu Glu Asn Val Asp Thr Thr Met
850 855 860

Lys Val His Ile Lys Arg Pro Glu Met Thr Ser Ser Ser Val
865 870 875

<210> 153
<211> 1938
<212> PRT
<213> Human

<400> 153

Met Ser Ser Asp Ala Glu Met Ala Ile Phe Gly Glu Ala Ala Pro Tyr

1 5 10 15

Leu Arg Lys Pro Glu Lys Glu Arg Ile Glu Ala Gln Asn Arg Pro Phe
20 25 30

Asp Ser Lys Lys Ala Cys Phe Val Ala Asp Asn Lys Glu Met Tyr Val
35 40 45

Lys Gly Met Ile Gln Thr Arg Glu Asn Asp Lys Val Ile Val Lys Thr
50 55 60

Leu Asp Asp Arg Met Leu Thr Leu Asn Asn Asp Gln Val Phe Pro Met
65 70 75 80

Asn Pro Pro Lys Phe Asp Lys Ile Glu Asp Met Ala Met Met Thr His
85 90 95

Leu His Glu Pro Ala Val Leu Tyr Asn Leu Lys Glu Arg Tyr Ala Ala
100 105 110

Trp Met Ile Tyr Thr Tyr Ser Gly Leu Phe Cys Val Thr Val Asn Pro
115 120 125

Tyr Lys Trp Leu Pro Val Tyr Lys Pro Glu Val Val Ala Ala Tyr Arg
130 135 140

Gly Lys Lys Arg Gln Glu Ala Pro Pro His Ile Phe Ser Ile Ser Asp
145 150 155 160

Asn Ala Tyr Gln Phe Met Leu Thr Asp Arg Asp Asn Gln Ser Ile Leu
165 170 175

Ile Thr Gly Glu Ser Gly Ala Gly Lys Thr Val Asn Thr Lys Arg Val
180 185 190

Ile Gln Tyr Phe Ala Thr Ile Ala Val Thr Gly Asp Lys Lys Lys Glu
195 200 205

Thr Gln Pro Gly Lys Met Gln Gly Thr Leu Glu Asp Gln Ile Ile Gln
210 215 220

Ala Asn Pro Leu Leu Glu Ala Phe Gly Asn Ala Lys Thr Val Arg Asn
225 230 235 240

Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg Ile His Phe Gly Ala
245 250 255

Thr Gly Lys Leu Ala Ser Ala Asp Ile Glu Thr Tyr Leu Leu Glu Lys
260 265 270

Ser Arg Val Thr Phe Gln Leu Ser Ser Glu Arg Ser Tyr His Ile Phe
275 280 285

Tyr Gln Ile Met Ser Asn Lys Lys Pro Glu Leu Ile Asp Leu Leu Leu
290 295 300

Ile Ser Thr Asn Pro Phe Asp Phe Pro Phe Val Ser Gln Gly Glu Val
305 310 315 320

Thr Val Ala Ser Ile Asp Asp Ser Glu Glu Leu Leu Ala Thr Asp Asn
325 330 335

Ala Ile Asp Ile Leu Gly Phe Ser Ser Glu Glu Lys Val Gly Ile Tyr
340 345 350

Lys Leu Thr Gly Ala Val Met His Tyr Gly Asn Met Lys Phe Lys Gln
355 360 365

Lys Gln Arg Glu Glu Gln Ala Glu Pro Asp Gly Thr Glu Val Ala Asp
370 375 380

Lys Ala Gly Tyr Leu Met Gly Leu Asn Ser Ala Glu Met Leu Lys Gly
385 390 395 400

Leu Cys Cys Pro Arg Val Lys Val Gly Asn Glu Tyr Val Thr Lys Gly
405 410 415

Gln Asn Val Gln Gln Val Thr Asn Ser Val Gly Ala Leu Ala Lys Ala
420 425 430

Val Tyr Glu Lys Met Phe Leu Trp Met Val Thr Arg Ile Asn Gln Gln
435 440 445

Leu Asp Thr Lys Gln Pro Arg Gln Tyr Phe Ile Gly Val Leu Asp Ile
450 455 460

Ala Gly Phe Glu Ile Phe Asp Phe Asn Ser Leu Glu Gln Leu Cys Ile
465 470 475 480

Asn Phe Thr Asn Glu Lys Leu Gln Gln Phe Phe Asn His His Met Phe
485 490 495

Val Leu Glu Gln Glu Glu Tyr Lys Lys Glu Gly Ile Glu Trp Glu Phe
500 505 510

Ile Asp Phe Gly Met Asp Leu Ala Ala Cys Ile Glu Leu Ile Glu Lys
515 520 525

Pro Met Gly Ile Phe Ser Ile Leu Glu Glu Glu Cys Met Phe Pro Lys
530 535 540

Ala Thr Asp Thr Ser Phe Lys Asn Lys Leu Tyr Asp Gln His Leu Gly
545 550 555 560

Lys Ser Asn Asn Phe Gln Lys Pro Lys Pro Ala Lys Gly Lys Ala Glu
565 570 575

Ala His Phe Ser Leu Val His Tyr Ala Gly Thr Val Asp Tyr Asn Ile
580 585 590

Ala Gly Trp Leu Asp Lys Asn Lys Asp Pro Leu Asn Glu Thr Val Val
595 600 605

Gly Leu Tyr Gln Lys Ser Ser Leu Lys Leu Leu Ser Phe Leu Phe Ser
610 615 620

Asn Tyr Ala Gly Ala Glu Thr Gly Asp Ser Gly Gly Ser Lys Lys Gly
625 630 635 640

Gly Lys Lys Lys Gly Ser Ser Phe Gln Thr Val Ser Ala Val Phe Arg
645 650 655

Glu Asn Leu Asn Lys Leu Met Thr Asn Leu Arg Ser Thr His Pro His
660 665 670

Phe Val Arg Cys Leu Ile Pro Asn Glu Thr Lys Thr Pro Gly Val Met
675 680 685

Asp His Tyr Leu Val Met His Gln Leu Arg Cys Asn Gly Val Leu Glu
690 695 700

Gly Ile Arg Ile Cys Arg Lys Gly Phe Pro Ser Arg Ile Leu Tyr Ala
705 710 715 720

Asp Phe Lys Gln Arg Tyr Arg Ile Leu Asn Ala Ser Ala Ile Pro Glu
725 730 735

Gly Gln Phe Ile Asp Ser Lys Asn Ala Ser Glu Lys Leu Leu Asn Ser
740 745 750

Ile Asp Val Asp Arg Glu Gln Phe Arg Phe Gly Asn Thr Lys Val Phe
755 760 765

Phe Lys Ala Gly Leu Leu Gly Leu Leu Glu Glu Met Arg Asp Glu Lys
770 775 780

Leu Val Thr Leu Met Thr Ser Thr Gln Ala Val Cys Arg Gly Tyr Leu
785 790 795 800

Met Arg Val Glu Phe Lys Lys Met Met Glu Arg Arg Asp Ser Ile Phe
805 810 815

Cys Ile Gln Tyr Asn Ile Arg Ser Phe Met Asn Val Lys His Trp Pro
820 825 830

Trp Met Asn Leu Phe Phe Lys Ile Lys Pro Leu Leu Lys Ser Ala Glu
835 840 845

Ala Glu Lys Glu Met Ala Thr Met Lys Glu Asp Phe Glu Arg Thr Lys
850 855 860

Glu Glu Leu Ala Arg Ser Glu Ala Arg Arg Lys Glu Leu Glu Glu Lys
865 870 875 880

Met Val Ser Leu Leu Gln Glu Lys Asn Asp Leu Gln Leu Gln Val Gln
885 890 895

Ser Glu Thr Glu Asn Leu Met Asp Ala Glu Glu Arg Cys Glu Gly Leu
900 905 910

Ile Lys Ser Lys Ile Leu Leu Glu Ala Lys Val Lys Glu Leu Thr Glu
915 920 925

Arg Leu Glu Glu Glu Glu Glu Met Asn Ser Glu Leu Val Ala Lys Lys
930 935 940

Arg Asn Leu Glu Asp Lys Cys Ser Ser Leu Lys Arg Asp Ile Asp Asp

945 950 955 960

Leu Glu Leu Thr Leu Thr Lys Val Glu Lys Glu Lys His Ala Thr Glu
965 970 975

Asn Lys Val Lys Asn Leu Ser Glu Glu Met Thr Ala Leu Glu Glu Asn
980 985 990

Ile Ser Lys Leu Thr Lys Glu Lys Lys Ser Leu Gln Glu Ala His Gln
995 1000 1005

Gln Thr Leu Asp Asp Leu Gln Val Glu Glu Asp Lys Val Asn Gly
1010 1015 1020

Leu Ile Lys Ile Asn Ala Lys Leu Glu Gln Gln Thr Asp Asp Leu
1025 1030 1035

Glu Gly Ser Leu Glu Gln Glu Lys Lys Leu Arg Ala Asp Leu Glu
1040 1045 1050

Arg Ala Lys Arg Lys Leu Glu Gly Asp Leu Lys Met Ser Gln Glu
1055 1060 1065

Ser Ile Met Asp Leu Glu Asn Glu Lys Gln Gln Ile Glu Glu Lys
1070 1075 1080

Leu Lys Lys Lys Glu Phe Glu Leu Ser Gln Leu Gln Ala Arg Ile
1085 1090 1095

Asp Asp Glu Gln Val His Ser Leu Gln Phe Gln Lys Lys Ile Lys
1100 1105 1110

Glu Leu Gln Ala Arg Ile Glu Glu Leu Glu Glu Glu Ile Glu Ala
1115 1120 1125

Glu His Thr Leu Arg Ala Lys Ile Glu Lys Gln Arg Ser Asp Leu
1130 1135 1140

Ala Arg Glu Leu Glu Glu Ile Ser Glu Arg Leu Glu Glu Ala Ser
1145 1150 1155

Gly Ala Thr Ser Ala Gln Ile Glu Met Asn Lys Lys Arg Glu Ala
1160 1165 1170

Glu Phe Gln Lys Met Arg Arg Asp Leu Glu Glu Ala Thr Leu Gln
1175 1180 1185

His Glu Ala Thr Ala Ala Thr Leu Arg Lys Lys Gln Ala Asp Ser
1190 1195 1200

Val Ala Glu Leu Gly Glu Gln Ile Asp Asn Leu Gln Arg Val Lys
1205 1210 1215

Gln Lys Leu Glu Lys Glu Lys Ser Glu Leu Lys Met Glu Ile Asp
1220 1225 1230

Asp Met Ala Ser Asn Ile Glu Ala Leu Ser Lys Ser Lys Ser Asn
1235 1240 1245

Ile Glu Arg Thr Cys Arg Thr Val Glu Asp Gln Phe Ser Glu Ile
1250 1255 1260

Lys Ala Lys Asp Glu Gln Gln Thr Gln Leu Ile His Asp Leu Asn
1265 1270 1275

Met Gln Lys Ala Arg Leu Gln Thr Gln Asn Gly Glu Leu Ser His
1280 1285 1290

Arg Val Glu Glu Lys Glu Ser Leu Ile Ser Gln Leu Thr Lys Ser
1295 1300 1305

Lys Gln Ala Leu Thr Gln Gln Leu Glu Glu Leu Lys Arg Gln Met
1310 1315 1320

Glu Glu Glu Thr Lys Ala Lys Asn Ala Met Ala His Ala Leu Gln
1325 1330 1335

Ser Ser Arg His Asp Cys Asp Leu Leu Arg Glu Gln Tyr Glu Glu
1340 1345 1350

Glu Gln Glu Ala Lys Ala Glu Leu Gln Arg Ala Leu Ser Lys Ala
1355 1360 1365

Asn Ser Glu Val Ala Gln Trp Lys Thr Lys Tyr Glu Thr Asp Ala
1370 1375 1380

Ile Gln Arg Thr Glu Glu Leu Glu Glu Ala Lys Lys Lys Leu Ala
1385 1390 1395

Gln Arg Leu Gln Glu Ala Glu Glu Lys Thr Glu Thr Ala Asn Ser
1400 1405 1410

Lys Cys Ala Ser Leu Glu Lys Thr Lys Gln Arg Leu Gln Gly Glu
1415 1420 1425

Val Glu Asp Leu Met Arg Asp Leu Glu Arg Ser His Thr Ala Cys
1430 1435 1440

Ala Thr Leu Asp Lys Lys Gln Arg Asn Phe Asp Lys Val Leu Ala
1445 1450 1455

Glu Trp Lys Gln Lys Leu Asp Glu Ser Gln Ala Glu Leu Glu Ala
1460 1465 1470

Ala Gln Lys Glu Ser Arg Ser Leu Ser Thr Glu Leu Phe Lys Met
1475 1480 1485

Arg Asn Ala Tyr Glu Glu Val Val Asp Gln Leu Glu Thr Leu Arg
1490 1495 1500

Arg Glu Asn Lys Asn Leu Gln Glu Glu Ile Ser Asp Leu Thr Glu
1505 1510 1515

Gln Ile Ala Glu Thr Gly Lys Asn Leu Gln Glu Ala Glu Lys Thr
1520 1525 1530

Lys Lys Leu Val Glu Gln Glu Lys Ser Asp Leu Gln Val Ala Leu
1535 1540 1545

Glu Glu Val Glu Gly Ser Leu Glu His Glu Glu Ser Lys Ile Leu
1550 1555 1560

Arg Val Gln Leu Glu Leu Ser Gln Val Lys Ser Glu Leu Asp Arg
1565 1570 1575

Lys Val Ile Glu Lys Asp Glu Glu Ile Glu Gln Leu Lys Arg Asn
1580 1585 1590

Ser Gln Arg Ala Ala Glu Ala Leu Gln Ser Val Leu Asp Ala Glu
1595 1600 1605

Ile Arg Ser Arg Asn Asp Ala Leu Arg Leu Lys Lys Lys Met Glu
1610 1615 1620

Gly Asp Leu Asn Glu Met Glu Ile Gln Leu Gly His Ser Asn Arg
1625 1630 1635

Gln Met Ala Glu Thr Gln Arg His Leu Arg Thr Val Gln Gly Gln
1640 1645 1650

Leu Lys Asp Ser Gln Leu His Leu Asp Asp Ala Leu Arg Ser Asn
1655 1660 1665

Glu Asp Leu Lys Glu Gln Leu Ala Ile Val Glu Arg Arg Asn Gly
1670 1675 1680

Leu Leu Leu Glu Glu Leu Glu Glu Met Lys Val Ala Leu Glu Gln
1685 1690 1695

Thr Glu Arg Thr Arg Arg Leu Ser Glu Gln Glu Leu Leu Asp Ala
1700 1705 1710

Ser Asp Arg Val Gln Leu Leu His Ser Gln Asn Thr Ser Leu Ile
1715 1720 1725

Asn Thr Lys Lys Lys Leu Glu Ala Asp Ile Ala Gln Cys Gln Ala
1730 1735 1740

Glu Val Glu Asn Ser Ile Gln Glu Ser Arg Asn Ala Glu Glu Lys
1745 1750 1755

Ala Lys Lys Ala Ile Thr Asp Ala Ala Met Met Ala Glu Glu Leu
1760 1765 1770

Lys Lys Glu Gln Asp Thr Ser Ala His Leu Glu Arg Met Lys Lys
1775 1780 1785

Asn Leu Glu Gln Thr Val Lys Asp Leu Gln His Arg Leu Asp Glu
1790 1795 1800

Ala Glu Gln Leu Ala Leu Lys Gly Gly Lys Lys Gln Ile Gln Lys
1805 1810 1815

Leu Glu Asn Arg Val Arg Glu Leu Glu Asn Glu Leu Asp Val Glu
1820 1825 1830

Gln Lys Arg Gly Ala Glu Ala Leu Lys Gly Ala His Lys Tyr Glu

1835 1840 1845

Arg Lys Val Lys Glu Met Thr Tyr Gln Ala Glu Glu Asp Arg Lys
1850 1855 1860

Asn Ile Leu Arg Leu Gln Asp Leu Val Asp Lys Leu Gln Ala Lys
1865 1870 1875

Val Lys Ser Tyr Lys Arg Gln Ala Glu Glu Ala Glu Glu Gln Ala
1880 1885 1890

Asn Thr Gln Leu Ser Arg Cys Arg Arg Val Gln His Glu Leu Glu
1895 1900 1905

Glu Ala Ala Glu Arg Ala Asp Ile Ala Glu Ser Gln Val Asn Lys
1910 1915 1920

Leu Arg Ala Lys Ser Arg Asp Val Gly Ser Gln Lys Met Glu Glu
1925 1930 1935

<210> 154
<211> 173
<212> PRT
<213> Human

<400> 154

Met Ala Ser Arg Lys Thr Lys Lys Lys Glu Gly Gly Ala Leu Arg Ala
1 5 10 15

Gln Arg Ala Ser Ser Asn Val Phe Ser Asn Phe Glu Gln Thr Gln Ile
20 25 30

Gln Glu Phe Lys Glu Ala Phe Thr Leu Met Asp Gln Asn Arg Asp Gly
35 40 45

Phe Ile Asp Lys Glu Asp Leu Lys Asp Thr Tyr Ala Ser Leu Gly Lys
50 55 60

Thr Asn Val Lys Asp Asp Glu Leu Asp Ala Met Leu Lys Glu Ala Ser
65 70 75 80

Gly Pro Ile Asn Phe Thr Met Phe Leu Asn Leu Phe Gly Glu Lys Leu
85 90 95

Ser Gly Thr Asp Ala Glu Glu Thr Ile Leu Asn Ala Phe Lys Met Leu

100 105 110

Asp Pro Asp Gly Lys Gly Lys Ile Asn Lys Glu Tyr Ile Lys Arg Leu
115 120 125

Leu Met Ser Gln Ala Asp Lys Met Thr Ala Glu Glu Val Asp Gln Met
130 135 140

Phe Gln Phe Ala Ser Ile Asp Val Ala Gly Asn Leu Asp Tyr Lys Ala
145 150 155 160

Leu Ser Tyr Val Ile Thr His Gly Glu Glu Lys Glu Glu
165 170

<210> 155
<211> 984
<212> PRT
<213> Human

<400> 155

Met Glu Thr Lys Gly Tyr His Ser Leu Pro Glu Gly Leu Asp Met Glu
1 5 10 15

Arg Arg Trp Gly Gln Val Ser Gln Ala Val Glu Arg Ser Ser Leu Gly
20 25 30

Pro Thr Glu Arg Thr Asp Glu Asn Asn Tyr Met Glu Ile Val Asn Val
35 40 45

Ser Cys Val Ser Gly Ala Ile Pro Asn Asn Ser Thr Gln Gly Ser Ser
50 55 60

Lys Glu Lys Gln Glu Leu Leu Pro Cys Leu Gln Gln Asp Asn Asn Arg
65 70 75 80

Pro Gly Ile Leu Thr Ser Asp Ile Lys Thr Glu Leu Glu Ser Lys Glu
85 90 95

Leu Ser Ala Thr Val Ala Glu Ser Met Gly Leu Tyr Met Asp Ser Val
100 105 110

Arg Asp Ala Asp Tyr Ser Tyr Glu Gln Gln Asn Gln Gln Gly Ser Met
115 120 125

Ser Pro Ala Lys Ile Tyr Gln Asn Val Glu Gln Leu Val Lys Phe Tyr

130 135 140

Lys Gly Asn Gly His Arg Pro Ser Thr Leu Ser Cys Val Asn Thr Pro
145 150 155 160

Leu Arg Ser Phe Met Ser Asp Ser Gly Ser Ser Val Asn Gly Gly Val
165 170 175

Met Arg Ala Ile Val Lys Ser Pro Ile Met Cys His Glu Lys Ser Pro
180 185 190

Ser Val Cys Ser Pro Leu Asn Met Thr Ser Ser Val Cys Ser Pro Ala
195 200 205

Gly Ile Asn Ser Val Ser Ser Thr Thr Ala Ser Phe Gly Ser Phe Pro
210 215 220

Val His Ser Pro Ile Thr Gln Gly Thr Pro Leu Thr Cys Ser Pro Asn
225 230 235 240

Ala Glu Asn Arg Gly Ser Arg Ser His Ser Pro Ala His Ala Ser Asn
245 250 255

Val Gly Ser Pro Leu Ser Ser Pro Leu Ser Ser Met Lys Ser Ser Ile
260 265 270

Ser Ser Pro Pro Ser His Cys Ser Val Lys Ser Pro Val Ser Ser Pro
275 280 285

Asn Asn Val Thr Leu Arg Ser Ser Val Ser Ser Pro Ala Asn Ile Asn
290 295 300

Asn Ser Arg Cys Ser Val Ser Ser Pro Ser Asn Thr Asn Asn Arg Ser
305 310 315 320

Thr Leu Ser Ser Pro Ala Ala Ser Thr Val Gly Ser Ile Cys Ser Pro
325 330 335

Val Asn Asn Ala Phe Ser Tyr Thr Ala Ser Gly Thr Ser Ala Gly Ser
340 345 350

Ser Thr Leu Arg Asp Val Val Pro Ser Pro Asp Thr Gln Glu Lys Gly
355 360 365

Ala Gln Glu Val Pro Phe Pro Lys Thr Glu Glu Val Glu Ser Ala Ile
370 375 380

Ser Asn Gly Val Thr Gly Gln Leu Asn Ile Val Gln Tyr Ile Lys Pro
385 390 395 400

Glu Pro Asp Gly Ala Phe Ser Ser Ser Cys Leu Gly Gly Asn Ser Lys
405 410 415

Ile Asn Ser Asp Ser Ser Phe Ser Val Pro Ile Lys Gln Glu Ser Thr
420 425 430

Lys His Ser Cys Ser Gly Thr Ser Phe Lys Gly Asn Pro Thr Val Asn
435 440 445

Pro Phe Pro Phe Met Asp Gly Ser Tyr Phe Ser Phe Met Asp Asp Lys
450 455 460

Asp Tyr Tyr Ser Leu Ser Gly Ile Leu Gly Pro Pro Val Pro Gly Phe
465 470 475 480

Asp Gly Asn Cys Glu Gly Ser Gly Phe Pro Val Gly Ile Lys Gln Glu
485 490 495

Pro Asp Asp Gly Ser Tyr Tyr Pro Glu Ala Ser Ile Pro Ser Ser Ala
500 505 510

Ile Val Gly Val Asn Ser Gly Gly Gln Ser Phe His Tyr Arg Ile Gly
515 520 525

Ala Gln Gly Thr Ile Ser Leu Ser Arg Ser Ala Arg Asp Gln Ser Phe
530 535 540

Gln His Leu Ser Ser Phe Pro Pro Val Asn Thr Leu Val Glu Ser Trp
545 550 555 560

Lys Ser His Gly Asp Leu Ser Ser Arg Arg Ser Asp Gly Tyr Pro Val
565 570 575

Leu Glu Tyr Ile Pro Glu Asn Val Ser Ser Ser Thr Leu Arg Ser Val
580 585 590

Ser Thr Gly Ser Ser Arg Pro Ser Lys Ile Cys Leu Val Cys Gly Asp
595 600 605

Glu Ala Ser Gly Cys His Tyr Gly Val Val Thr Cys Gly Ser Cys Lys
    610   615   620

Val Phe Phe Lys Arg Ala Val Glu Gly Gln His Asn Tyr Leu Cys Ala
625   630   635   640

Gly Arg Asn Asp Cys Ile Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro
                645   650   655

Ala Cys Arg Leu Gln Lys Cys Leu Gln Ala Gly Met Asn Leu Gly Ala
            660   665   670

Arg Lys Ser Lys Lys Leu Gly Lys Leu Lys Gly Ile His Glu Glu Gln
        675   680   685

Pro Gln Gln Gln Gln Pro Pro Pro Pro Pro Pro Pro Pro Gln Ser Pro
    690   695   700

Glu Glu Gly Thr Thr Tyr Ile Ala Pro Ala Lys Glu Pro Ser Val Asn
705   710   715   720

Thr Ala Leu Val Pro Gln Leu Ser Thr Ile Ser Arg Ala Leu Thr Pro
                725   730   735

Ser Pro Val Met Val Leu Glu Asn Ile Glu Pro Glu Ile Val Tyr Ala
            740   745   750

Gly Tyr Asp Ser Ser Lys Pro Asp Thr Ala Glu Asn Leu Leu Ser Thr
        755   760   765

Leu Asn Arg Leu Ala Gly Lys Gln Met Ile Gln Val Val Lys Trp Ala
    770   775   780

Lys Val Leu Pro Gly Phe Lys Asn Leu Pro Leu Glu Asp Gln Ile Thr
785   790   795   800

Leu Ile Gln Tyr Ser Trp Met Cys Leu Ser Ser Phe Ala Leu Ser Trp
                805   810   815

Arg Ser Tyr Lys His Thr Asn Ser Gln Phe Leu Tyr Phe Ala Pro Asp
            820   825   830

Leu Val Phe Asn Glu Glu Lys Met His Gln Ser Ala Met Tyr Glu Leu
        835   840   845

Cys Gln Gly Met His Gln Ile Ser Leu Gln Phe Val Arg Leu Gln Leu
850 855 860

Thr Phe Glu Glu Tyr Thr Ile Met Lys Val Leu Leu Leu Leu Ser Thr
865 870 875 880

Ile Pro Lys Asp Gly Leu Lys Ser Gln Ala Ala Phe Glu Glu Met Arg
885 890 895

Thr Asn Tyr Ile Lys Glu Leu Arg Lys Met Val Thr Lys Cys Pro Asn
900 905 910

Asn Ser Gly Gln Ser Trp Gln Arg Phe Tyr Gln Leu Thr Lys Leu Leu
915 920 925

Asp Ser Met His Asp Leu Val Ser Asp Leu Leu Glu Phe Cys Phe Tyr
930 935 940

Thr Phe Arg Glu Ser His Ala Leu Lys Val Glu Phe Pro Ala Met Leu
945 950 955 960

Val Glu Ile Ile Ser Asp Gln Leu Pro Lys Val Glu Ser Gly Asn Ala
965 970 975

Lys Pro Leu Tyr Phe His Arg Lys
980

<210> 156
<211> 495
<212> PRT
<213> Human

<400> 156

Met Ser Ser Asn Ser Asp Thr Gly Asp Leu Gln Glu Ser Leu Lys His
1 5 10 15

Gly Leu Thr Pro Ile Val Ser Gln Phe Lys Met Val Asn Tyr Ser Tyr
20 25 30

Asp Glu Asp Leu Glu Glu Leu Cys Pro Val Cys Gly Asp Lys Val Ser
35 40 45

Gly Tyr His Tyr Gly Leu Leu Thr Cys Glu Ser Cys Lys Gly Phe Phe
50 55 60

Lys Arg Thr Val Gln Asn Asn Lys Arg Tyr Thr Cys Ile Glu Asn Gln
65 70 75 80

Asn Cys Gln Ile Asp Lys Thr Gln Arg Lys Arg Cys Pro Tyr Cys Arg
85 90 95

Phe Gln Lys Cys Leu Ser Val Gly Met Lys Leu Glu Ala Val Arg Ala
100 105 110

Asp Arg Met Arg Gly Gly Arg Asn Lys Phe Gly Pro Met Tyr Lys Arg
115 120 125

Asp Arg Ala Leu Lys Gln Gln Lys Lys Ala Leu Ile Arg Ala Asn Gly
130 135 140

Leu Lys Leu Glu Ala Met Ser Gln Val Ile Gln Ala Met Pro Ser Asp
145 150 155 160

Leu Thr Ile Ser Ser Ala Ile Gln Asn Ile His Ser Ala Ser Lys Gly
165 170 175

Leu Pro Leu Asn His Ala Ala Leu Pro Pro Thr Asp Tyr Asp Arg Ser
180 185 190

Pro Phe Val Thr Ser Pro Ile Ser Met Thr Met Pro Pro His Gly Ser
195 200 205

Leu Gln Gly Tyr Gln Thr Tyr Gly His Phe Pro Ser Arg Ala Ile Lys
210 215 220

Ser Glu Tyr Pro Asp Pro Tyr Thr Ser Ser Pro Glu Ser Ile Met Gly
225 230 235 240

Tyr Ser Tyr Met Asp Ser Tyr Gln Thr Ser Ser Pro Ala Ser Ile Pro
245 250 255

His Leu Ile Leu Glu Leu Leu Lys Cys Glu Pro Asp Glu Pro Gln Val
260 265 270

Gln Ala Lys Ile Met Ala Tyr Leu Gln Gln Glu Gln Ala Asn Arg Ser
275 280 285

Lys His Glu Lys Leu Ser Thr Phe Gly Leu Met Cys Lys Met Ala Asp

290 295 300

Gln Thr Leu Phe Ser Ile Val Glu Trp Ala Arg Ser Ser Ile Phe Phe
305 310 315 320

Arg Glu Leu Lys Val Asp Asp Gln Met Lys Leu Leu Gln Asn Cys Trp
325 330 335

Ser Glu Leu Leu Ile Leu Asp His Ile Tyr Arg Gln Val Val His Gly
340 345 350

Lys Glu Gly Ser Ile Phe Leu Val Thr Gly Gln Gln Val Asp Tyr Ser
355 360 365

Ile Ile Ala Ser Gln Ala Gly Ala Thr Leu Asn Asn Leu Met Ser His
370 375 380

Ala Gln Glu Leu Val Ala Lys Leu Arg Ser Leu Gln Phe Asp Gln Arg
385 390 395 400

Glu Phe Val Cys Leu Lys Phe Leu Val Leu Phe Ser Leu Asp Val Lys
405 410 415

Asn Leu Glu Asn Phe Gln Leu Val Glu Gly Val Gln Glu Gln Val Asn
420 425 430

Ala Ala Leu Leu Asp Tyr Thr Met Cys Asn Tyr Pro Gln Gln Thr Glu
435 440 445

Lys Phe Gly Gln Leu Leu Leu Arg Leu Pro Glu Ile Arg Ala Ile Ser
450 455 460

Met Gln Ala Glu Glu Tyr Leu Tyr Tyr Lys His Leu Asn Gly Asp Val
465 470 475 480

Pro Tyr Asn Asn Leu Leu Ile Glu Met Leu His Ala Lys Arg Ala
485 490 495

<210> 157
<211> 2303
<212> PRT
<213> Human

<400> 157

Met Thr Ser Glu Glu Met Thr Ala Ser Val Leu Ile Pro Val Thr Gln

1 5 10 15

Arg Lys Val Val Ser Ala Gln Ser Ala Ala Asp Glu Ser Ser Glu Lys
20 25 30

Val Ser Asp Ile Asn Ile Ser Lys Ala His Thr Val Arg Arg Ser Gly
35 40 45

Glu Thr Ser His Thr Ile Ser Gln Leu Asn Lys Leu Lys Glu Glu Pro
50 55 60

Ser Gly Ser Asn Leu Pro Lys Ile Leu Ser Ile Ala Arg Glu Lys Ile
65 70 75 80

Val Ser Asp Glu Asn Ser Asn Glu Lys Cys Trp Glu Lys Ile Met Pro
85 90 95

Asp Ser Ala Lys Asn Leu Asn Ile Asn Cys Asn Asn Ile Leu Arg Asn
100 105 110

His Gln His Gly Leu Pro Gln Arg Gln Phe Tyr Glu Met Tyr Asn Ser
115 120 125

Val Ala Glu Glu Asp Leu Cys Leu Glu Thr Gly Ile Pro Ser Pro Leu
130 135 140

Glu Arg Lys Val Phe Pro Gly Ile Gln Leu Glu Leu Asp Arg Pro Ser
145 150 155 160

Met Gly Ile Ser Pro Leu Gly Asn Gln Ser Val Ile Ile Glu Thr Gly
165 170 175

Arg Ala His Pro Asp Ser Arg Arg Ala Val Phe His Phe His Tyr Glu
180 185 190

Val Asp Arg Arg Met Ser Asp Thr Phe Cys Thr Leu Ser Glu Asn Leu
195 200 205

Ile Leu Asp Asp Cys Gly Asn Cys Val Pro Leu Pro Gly Gly Glu Glu
210 215 220

Lys Gln Lys Lys Asn Tyr Val Ala Tyr Thr Cys Lys Leu Met Glu Leu
225 230 235 240

Ala Lys Asn Cys Asp Asn Lys Asn Glu Gln Leu Gln Cys Asp His Cys
245 250 255

Asp Thr Leu Asn Asp Lys Tyr Phe Cys Phe Glu Gly Ser Cys Glu Lys
260 265 270

Val Asp Met Val Tyr Ser Gly Asp Ser Phe Cys Arg Lys Asp Phe Thr
275 280 285

Asp Ser Gln Ala Ala Lys Thr Phe Leu Ser His Phe Glu Asp Phe Pro
290 295 300

Asp Asn Cys Asp Asp Val Glu Glu Asp Ala Phe Lys Ser Lys Lys Glu
305 310 315 320

Arg Ser Thr Leu Leu Val Arg Arg Phe Cys Lys Asn Asp Arg Glu Val
325 330 335

Lys Lys Ser Val Tyr Thr Gly Thr Arg Ala Ile Val Arg Thr Leu Pro
340 345 350

Ser Gly His Ile Gly Leu Thr Ala Trp Ser Tyr Ile Asp Gln Lys Arg
355 360 365

Asn Gly Pro Leu Leu Pro Cys Gly Arg Val Met Glu Pro Pro Ser Thr
370 375 380

Val Glu Ile Arg Gln Asp Gly Ser Gln Arg Leu Ser Glu Ala Gln Trp
385 390 395 400

Tyr Pro Ile Tyr Asn Ala Val Arg Arg Glu Glu Thr Glu Asn Thr Val
405 410 415

Gly Ser Leu Leu His Phe Leu Thr Lys Leu Pro Ala Ser Glu Thr Ala
420 425 430

His Gly Arg Ile Ser Val Gly Pro Cys Leu Lys Gln Cys Val Arg Asp
435 440 445

Thr Val Cys Glu Tyr Arg Ala Thr Leu Gln Arg Thr Ser Ile Ser Gln
450 455 460

Tyr Ile Thr Gly Ser Leu Leu Glu Ala Thr Thr Ser Leu Gly Ala Arg
465 470 475 480

Ser Gly Leu Leu Ser Thr Phe Gly Gly Ser Thr Gly Arg Met Met Leu
485 490 495

Lys Glu Arg Gln Pro Gly Pro Ser Val Ala Asn Ser Asn Ala Leu Pro
500 505 510

Ser Ser Ser Ala Gly Ile Ser Lys Glu Leu Ile Asp Leu Gln Pro Leu
515 520 525

Ile Gln Phe Pro Glu Glu Val Ala Ser Ile Leu Met Glu Gln Glu Gln
530 535 540

Thr Ile Tyr Arg Arg Val Leu Pro Val Asp Tyr Leu Cys Phe Leu Thr
545 550 555 560

Arg Asp Leu Gly Thr Pro Glu Cys Gln Ser Ser Leu Pro Cys Leu Lys
565 570 575

Ala Ser Ile Ser Ala Ser Ile Leu Thr Thr Gln Asn Gly Glu His Asn
580 585 590

Ala Leu Glu Asp Leu Val Met Arg Phe Asn Glu Val Ser Ser Trp Val
595 600 605

Thr Trp Leu Ile Leu Thr Ala Gly Ser Met Glu Glu Lys Arg Glu Val
610 615 620

Phe Ser Tyr Leu Val His Val Ala Lys Cys Cys Trp Asn Met Gly Asn
625 630 635 640

Tyr Asn Ala Val Met Glu Phe Leu Ala Gly Leu Arg Ser Arg Lys Val
645 650 655

Leu Lys Met Trp Gln Phe Met Asp Gln Ser Asp Ile Glu Thr Met Arg
660 665 670

Ser Leu Lys Asp Ala Met Ala Gln His Glu Ser Ser Cys Glu Tyr Arg
675 680 685

Lys Val Val Thr Arg Ala Leu His Ile Pro Gly Cys Lys Val Val Pro
690 695 700

Phe Cys Gly Val Phe Leu Lys Glu Leu Cys Glu Val Leu Asp Gly Ala
705 710 715 720

Ser Gly Leu Met Lys Leu Cys Pro Arg Tyr Asn Ser Gln Glu Glu Thr
725 730 735

Leu Glu Phe Val Ala Asp Tyr Ser Gly Gln Asp Asn Phe Leu Gln Arg
740 745 750

Val Gly Gln Asn Gly Leu Lys Asn Ser Glu Lys Glu Ser Thr Val Asn
755 760 765

Ser Ile Phe Gln Val Ile Arg Ser Cys Asn Arg Ser Leu Glu Thr Asp
770 775 780

Glu Glu Asp Ser Pro Ser Glu Gly Asn Ser Ser Arg Lys Ser Ser Leu
785 790 795 800

Lys Asp Lys Ser Arg Trp Gln Phe Ile Ile Gly Asp Leu Leu Asp Ser
805 810 815

Asp Asn Asp Ile Phe Glu Gln Ser Lys Glu Tyr Asp Ser His Gly Ser
820 825 830

Glu Asp Ser Gln Lys Ala Phe Asp His Gly Thr Glu Leu Ile Pro Trp
835 840 845

Tyr Val Leu Ser Ile Gln Ala Asp Val His Gln Phe Leu Leu Gln Gly
850 855 860

Ala Thr Val Ile His Tyr Asp Gln Asp Thr His Leu Ser Ala Arg Cys
865 870 875 880

Phe Leu Gln Leu Gln Pro Asp Asn Ser Thr Leu Thr Trp Val Lys Pro
885 890 895

Thr Thr Ala Ser Pro Ala Ser Ser Lys Ala Lys Leu Gly Val Leu Asn
900 905 910

Asn Thr Ala Glu Pro Gly Lys Phe Pro Leu Leu Gly Asn Ala Gly Leu
915 920 925

Ser Ser Leu Thr Glu Gly Val Leu Asp Leu Phe Ala Val Lys Ala Val
930 935 940

Tyr Met Gly His Pro Gly Ile Asp Ile His Thr Val Cys Val Gln Asn

945 950 955 960

Lys Leu Gly Ser Met Phe Leu Ser Glu Thr Gly Val Thr Leu Leu Tyr
965 970 975

Gly Leu Gln Thr Thr Asp Asn Arg Leu Leu His Phe Val Ala Pro Lys
980 985 990

His Thr Ala Lys Met Leu Phe Ser Gly Leu Leu Glu Leu Thr Arg Ala
995 1000 1005

Val Arg Lys Met Arg Lys Phe Pro Asp Gln Arg Gln Gln Trp Leu
1010 1015 1020

Arg Lys Gln Tyr Val Ser Leu Tyr Gln Glu Asp Gly Arg Tyr Glu
1025 1030 1035

Gly Pro Thr Leu Ala His Ala Val Glu Leu Phe Gly Gly Arg Arg
1040 1045 1050

Trp Ser Ala Arg Asn Pro Ser Pro Gly Thr Ser Ala Lys Asn Ala
1055 1060 1065

Glu Lys Pro Asn Met Gln Arg Asn Asn Thr Leu Gly Ile Ser Thr
1070 1075 1080

Thr Lys Lys Lys Lys Lys Ile Leu Met Arg Gly Glu Ser Gly Glu
1085 1090 1095

Val Thr Asp Asp Glu Met Ala Thr Arg Lys Ala Lys Met His Lys
1100 1105 1110

Glu Cys Arg Ser Arg Ser Gly Ser Asp Pro Gln Asp Ile Asn Glu
1115 1120 1125

Gln Glu Glu Ser Glu Val Asn Ala Ile Ala Asn Pro Pro Asn Pro
1130 1135 1140

Leu Pro Ser Arg Arg Ala His Ser Leu Thr Thr Ala Gly Ser Pro
1145 1150 1155

Asn Leu Ala Ala Gly Thr Ser Ser Pro Ile Arg Pro Val Ser Ser
1160 1165 1170

Pro Val Leu Ser Ser Ser Asn Lys Ser Pro Ser Ser Ala Trp Ser
1175 1180 1185

Ser Ser Ser Trp His Gly Arg Ile Lys Gly Gly Met Lys Gly Phe
1190 1195 1200

Gln Ser Phe Met Val Ser Asp Ser Asn Met Ser Phe Val Glu Phe
1205 1210 1215

Val Glu Leu Phe Lys Ser Phe Ser Val Arg Ser Arg Lys Asp Leu
1220 1225 1230

Lys Asp Leu Phe Asp Val Tyr Ala Val Pro Cys Asn Arg Ser Gly
1235 1240 1245

Ser Glu Ser Ala Pro Leu Tyr Thr Asn Leu Thr Ile Asp Glu Asn
1250 1255 1260

Thr Ser Asp Leu Gln Pro Asp Leu Asp Leu Leu Thr Arg Asn Val
1265 1270 1275

Ser Asp Leu Gly Leu Phe Ile Lys Ser Lys Gln Gln Leu Ser Asp
1280 1285 1290

Asn Gln Arg Gln Ile Ser Asp Ala Ile Ala Ala Ala Ser Ile Val
1295 1300 1305

Thr Asn Gly Thr Gly Ile Glu Ser Thr Ser Leu Gly Ile Phe Gly
1310 1315 1320

Val Gly Ile Leu Gln Leu Asn Asp Phe Leu Val Asn Cys Gln Gly
1325 1330 1335

Glu His Cys Thr Tyr Asp Glu Ile Leu Ser Ile Ile Gln Lys Phe
1340 1345 1350

Glu Pro Ser Ile Ser Met Cys His Gln Gly Leu Met Ser Phe Glu
1355 1360 1365

Gly Phe Ala Arg Phe Leu Met Asp Lys Glu Asn Phe Ala Ser Lys
1370 1375 1380

Asn Asp Glu Ser Gln Glu Asn Ile Lys Glu Leu Gln Leu Pro Leu
1385 1390 1395

Ser Tyr Tyr Tyr Ile Glu Ser Ser His Asn Thr Tyr Leu Thr Gly
1400 1405 1410

His Gln Leu Lys Gly Glu Ser Ser Val Glu Leu Tyr Ser Gln Val
1415 1420 1425

Leu Leu Gln Gly Cys Arg Ser Val Glu Leu Asp Cys Trp Asp Gly
1430 1435 1440

Asp Asp Gly Met Pro Ile Ile Tyr His Gly His Thr Pro Thr Thr
1445 1450 1455

Lys Ile Pro Phe Lys Glu Val Val Glu Ala Ile Asp Arg Ser Ala
1460 1465 1470

Phe Ile Asn Ser Asp Leu Pro Ile Ile Ile Ser Ile Glu Asn His
1475 1480 1485

Cys Ser Leu Pro Gln Gln Arg Lys Met Ala Glu Ile Phe Lys Thr
1490 1495 1500

Val Phe Gly Glu Lys Leu Val Thr Lys Phe Leu Phe Glu Thr Asp
1505 1510 1515

Phe Ser Asp Asp Pro Met Leu Pro Ser Pro Asp Gln Leu Arg Lys
1520 1525 1530

Lys Val Leu Leu Lys Asn Lys Lys Leu Lys Ala His Gln Thr Pro
1535 1540 1545

Val Asp Ile Leu Lys Gln Lys Ala His Gln Leu Ala Ser Met Gln
1550 1555 1560

Val Gln Ala Tyr Asn Gly Gly Asn Ala Asn Pro Arg Pro Ala Asn
1565 1570 1575

Asn Glu Glu Glu Glu Asp Glu Glu Asp Glu Tyr Asp Tyr Asp Tyr
1580 1585 1590

Glu Ser Leu Ser Asp Asp Asn Ile Leu Glu Asp Arg Pro Glu Asn
1595 1600 1605

Lys Ser Cys Asn Asp Lys Leu Gln Phe Glu Tyr Asn Glu Glu Ile
1610 1615 1620

Pro Lys Arg Ile Lys Lys Ala Asp Asn Ser Ala Cys Asn Lys Gly
1625 1630 1635

Lys Val Tyr Asp Met Glu Leu Gly Glu Glu Phe Tyr Leu Asp Gln
1640 1645 1650

Asn Lys Lys Glu Ser Arg Gln Ile Ala Pro Glu Leu Ser Asp Leu
1655 1660 1665

Val Ile Tyr Arg Gln Ala Val Lys Phe Pro Gly Leu Ser Thr Leu
1670 1675 1680

Asn Ala Ser Gly Ser Ser Arg Gly Lys Glu Arg Lys Ser Arg Lys
1685 1690 1695

Ser Ile Phe Gly Asn Asn Pro Gly Arg Met Ser Pro Gly Glu Thr
1700 1705 1710

Ala Ser Phe Asn Lys Thr Ser Gly Lys Ser Ser Cys Glu Gly Ile
1715 1720 1725

Arg Gln Thr Trp Glu Glu Ser Ser Ser Pro Leu Asn Pro Thr Thr
1730 1735 1740

Ser Leu Ser Ala Ile Ile Arg Thr Pro Lys Cys Tyr His Ile Ser
1745 1750 1755

Ser Leu Asn Glu Asn Ala Ala Lys Arg Leu Cys Arg Arg Tyr Ser
1760 1765 1770

Gln Lys Leu Ile Gln His Thr Ala Cys Gln Leu Leu Arg Thr Tyr
1775 1780 1785

Pro Ala Ala Thr Arg Ile Asp Ser Ser Asn Pro Asn Pro Leu Met
1790 1795 1800

Phe Trp Leu His Gly Ile Gln Leu Val Ala Leu Asn Tyr Gln Thr
1805 1810 1815

Asp Asp Leu Pro Leu His Leu Asn Ala Ala Met Phe Glu Ala Asn
1820 1825 1830

Gly Gly Cys Gly Tyr Val Leu Lys Pro Pro Val Leu Trp Asp Lys

1835 1840 1845

Asn Cys Pro Met Tyr Gln Lys Phe Ser Pro Leu Glu Arg Asp Leu
1850 1855 1860

Asp Ser Met Asp Pro Ala Val Tyr Ser Leu Thr Ile Val Ser Gly
1865 1870 1875

Gln Asn Val Cys Pro Ser Asn Ser Met Gly Ser Pro Cys Ile Glu
1880 1885 1890

Val Asp Val Leu Gly Met Pro Leu Asp Ser Cys His Phe Arg Thr
1895 1900 1905

Lys Pro Ile His Arg Asn Thr Leu Asn Pro Met Trp Asn Glu Gln
1910 1915 1920

Phe Leu Phe Arg Val His Phe Glu Asp Leu Val Phe Leu Arg Phe
1925 1930 1935

Ala Val Val Glu Asn Asn Ser Ser Ala Val Thr Ala Gln Arg Ile
1940 1945 1950

Ile Pro Leu Lys Ala Leu Lys Arg Gly Tyr Arg His Leu Gln Leu
1955 1960 1965

Arg Asn Leu His Asn Glu Val Leu Glu Ile Ser Ser Leu Phe Ile
1970 1975 1980

Asn Ser Arg Arg Met Glu Glu Asn Ser Ser Gly Asn Thr Met Ser
1985 1990 1995

Ala Ser Ser Met Phe Asn Thr Glu Glu Arg Lys Cys Leu Gln Thr
2000 2005 2010

His Arg Val Thr Val His Gly Val Pro Gly Pro Glu Pro Phe Thr
2015 2020 2025

Val Phe Thr Ile Asn Gly Gly Thr Lys Ala Lys Gln Leu Leu Gln
2030 2035 2040

Gln Ile Leu Thr Asn Glu Gln Asp Ile Lys Pro Val Thr Thr Asp
2045 2050 2055

Tyr Phe Leu Met Glu Glu Lys Tyr Phe Ile Ser Lys Glu Lys Asn
2060 2065 2070

Glu Cys Arg Lys Gln Pro Phe Gln Arg Ala Ile Gly Pro Glu Glu
2075 2080 2085

Glu Ile Met Gln Ile Leu Ser Ser Trp Phe Pro Glu Glu Gly Tyr
2090 2095 2100

Met Gly Arg Ile Val Leu Lys Thr Gln Gln Glu Asn Leu Glu Glu
2105 2110 2115

Lys Asn Ile Val Gln Asp Asp Lys Glu Val Ile Leu Ser Ser Glu
2120 2125 2130

Glu Glu Ser Phe Phe Val Gln Val His Asp Val Ser Pro Glu Gln
2135 2140 2145

Pro Arg Thr Val Ile Lys Ala Pro Arg Val Ser Thr Ala Gln Asp
2150 2155 2160

Val Ile Gln Gln Thr Leu Cys Lys Ala Lys Tyr Ser Tyr Ser Ile
2165 2170 2175

Leu Ser Asn Pro Asn Pro Ser Asp Tyr Val Leu Leu Glu Glu Val
2180 2185 2190

Val Lys Asp Thr Thr Asn Lys Lys Thr Thr Thr Pro Lys Ser Ser
2195 2200 2205

Gln Arg Val Leu Leu Asp Gln Glu Cys Val Phe Gln Ala Gln Ser
2210 2215 2220

Lys Trp Lys Gly Ala Gly Lys Phe Ile Leu Lys Leu Lys Glu Gln
2225 2230 2235

Val Gln Ala Ser Arg Glu Asp Lys Lys Lys Gly Ile Ser Phe Ala
2240 2245 2250

Ser Glu Leu Lys Lys Leu Thr Lys Ser Thr Lys Gln Pro Arg Gly
2255 2260 2265

Leu Thr Ser Pro Ser Gln Leu Leu Thr Ser Glu Ser Ile Gln Thr
2270 2275 2280

Lys Glu Glu Lys Pro Val Gly Gly Leu Ser Pro Val Thr Gln Trp
2285 2290 2295

Ile Thr Asp Ser Asp
2300

<210> 158
<211> 303
<212> PRT
<213> Human

<400> 158

Met Ala Ser Trp Ala Lys Gly Arg Ser Tyr Leu Ala Pro Gly Leu Leu
1 5 10 15

Gln Gly Gln Val Ala Ile Val Thr Gly Gly Ala Thr Gly Ile Gly Lys
20 25 30

Ala Ile Val Lys Glu Leu Leu Glu Leu Gly Ser Asn Val Val Ile Ala
35 40 45

Ser Arg Lys Leu Glu Arg Leu Lys Ser Ala Ala Asp Glu Leu Gln Ala
50 55 60

Asn Leu Pro Pro Thr Lys Gln Ala Arg Val Ile Pro Ile Gln Cys Asn
65 70 75 80

Ile Arg Asn Glu Glu Glu Val Asn Asn Leu Val Lys Ser Thr Leu Asp
85 90 95

Thr Phe Gly Lys Ile Asn Phe Leu Val Asn Asn Gly Gly Gly Gln Phe
100 105 110

Leu Ser Pro Ala Glu His Ile Ser Ser Lys Gly Trp His Ala Val Leu
115 120 125

Glu Thr Asn Leu Thr Gly Thr Phe Tyr Met Cys Lys Ala Val Tyr Ser
130 135 140

Ser Trp Met Lys Glu His Gly Gly Ser Ile Val Asn Ile Ile Val Pro
145 150 155 160

Thr Lys Ala Gly Phe Pro Leu Ala Val His Ser Gly Ala Ala Arg Ala
165 170 175

Gly Val Tyr Asn Leu Thr Lys Ser Leu Ala Leu Glu Trp Ala Cys Ser
180 185 190

Gly Ile Arg Ile Asn Cys Val Ala Pro Gly Val Ile Tyr Ser Gln Thr
195 200 205

Ala Val Glu Asn Tyr Gly Ser Trp Gly Gln Ser Phe Phe Glu Gly Ser
210 215 220

Phe Gln Lys Ile Pro Ala Lys Arg Ile Gly Val Pro Glu Glu Val Ser
225 230 235 240

Ser Val Val Cys Phe Leu Leu Ser Pro Ala Ala Ser Phe Ile Thr Gly
245 250 255

Gln Ser Val Asp Val Asp Gly Gly Arg Ser Leu Tyr Thr His Ser Tyr
260 265 270

Glu Val Pro Asp His Asp Asn Trp Pro Lys Gly Ala Gly Asp Leu Ser
275 280 285

Val Val Lys Lys Met Lys Glu Thr Phe Lys Glu Lys Ala Lys Leu
290 295 300

<210> 159
<211> 246
<212> PRT
<213> Human

<400> 159

Met Glu Glu Ala Lys Ser Gln Ser Leu Glu Glu Asp Phe Glu Gly Gln
1 5 10 15

Ala Thr His Thr Gly Pro Lys Gly Val Ile Asn Asp Trp Arg Lys Phe
20 25 30

Lys Leu Glu Ser Gln Asp Ser Asp Ser Ile Pro Pro Ser Lys Lys Glu
35 40 45

Ile Leu Arg Gln Met Ser Ser Pro Gln Ser Arg Asn Gly Lys Asp Ser
50 55 60

Lys Glu Arg Val Ser Arg Lys Met Ser Ile Gln Glu Tyr Glu Leu Ile
65 70 75 80

His Lys Glu Lys Glu Asp Glu Asn Cys Leu Arg Lys Tyr Arg Arg Gln
85 90 95

Cys Met Gln Asp Met His Gln Lys Leu Ser Phe Gly Pro Arg Tyr Gly
100 105 110

Phe Val Tyr Glu Leu Glu Thr Gly Lys Gln Phe Leu Glu Thr Ile Glu
115 120 125

Lys Glu Leu Lys Ile Thr Thr Ile Val Val His Ile Tyr Glu Asp Gly
130 135 140

Ile Lys Gly Cys Asp Ala Leu Asn Ser Ser Leu Thr Cys Leu Ala Ala
145 150 155 160

Glu Tyr Pro Ile Val Lys Phe Cys Lys Ile Lys Ala Ser Asn Thr Gly
165 170 175

Ala Gly Asp Arg Phe Ser Leu Asp Val Leu Pro Thr Leu Leu Ile Tyr
180 185 190

Lys Gly Gly Glu Leu Ile Ser Asn Phe Ile Ser Val Ala Glu Gln Phe
195 200 205

Ala Glu Glu Phe Phe Ala Gly Asp Val Glu Ser Phe Leu Asn Glu Tyr
210 215 220

Gly Leu Leu Pro Glu Arg Glu Val His Val Leu Glu His Thr Lys Ile
225 230 235 240

Glu Glu Glu Asp Val Glu
245

<210> 160
<211> 403
<212> PRT
<213> Human

<400> 160

Met Thr Ala Ile Ile Lys Glu Ile Val Ser Arg Asn Lys Arg Arg Tyr
1 5 10 15

Gln Glu Asp Gly Phe Asp Leu Asp Leu Thr Tyr Ile Tyr Pro Asn Ile
20 25 30

```
Ile Ala Met Gly Phe Pro Ala Glu Arg Leu Glu Gly Val Tyr Arg Asn
        35                  40                  45

Asn Ile Asp Asp Val Val Arg Phe Leu Asp Ser Lys His Lys Asn His
    50                  55                  60

Tyr Lys Ile Tyr Asn Leu Cys Ala Glu Arg His Tyr Asp Thr Ala Lys
65                  70                  75                  80

Phe Asn Cys Arg Val Ala Gln Tyr Pro Phe Glu Asp His Asn Pro Pro
                85                  90                  95

Gln Leu Glu Leu Ile Lys Pro Phe Cys Glu Asp Leu Asp Gln Trp Leu
            100                 105                 110

Ser Glu Asp Asp Asn His Val Ala Ala Ile His Cys Lys Ala Gly Lys
        115                 120                 125

Gly Arg Thr Gly Val Met Ile Cys Ala Tyr Leu Leu His Arg Gly Lys
    130                 135                 140

Phe Leu Lys Ala Gln Glu Ala Leu Asp Phe Tyr Gly Glu Val Arg Thr
145                 150                 155                 160

Arg Asp Lys Lys Gly Val Thr Ile Pro Ser Gln Arg Arg Tyr Val Tyr
                165                 170                 175

Tyr Tyr Ser Tyr Leu Leu Lys Asn His Leu Asp Tyr Arg Pro Val Ala
            180                 185                 190

Leu Leu Phe His Lys Met Met Phe Glu Thr Ile Pro Met Phe Ser Gly
        195                 200                 205

Gly Thr Cys Asn Pro Gln Phe Val Val Cys Gln Leu Lys Val Lys Ile
    210                 215                 220

Tyr Ser Ser Asn Ser Gly Pro Thr Arg Arg Glu Asp Lys Phe Met Tyr
225                 230                 235                 240

Phe Glu Phe Pro Gln Pro Leu Pro Val Cys Gly Asp Ile Lys Val Glu
                245                 250                 255

Phe Phe His Lys Gln Asn Lys Met Leu Lys Lys Asp Lys Met Phe His
            260                 265                 270
```

Phe Trp Val Asn Thr Phe Phe Ile Pro Gly Pro Glu Glu Thr Ser Glu
275 280 285

Lys Val Glu Asn Gly Ser Leu Cys Asp Gln Glu Ile Asp Ser Ile Cys
290 295 300

Ser Ile Glu Arg Ala Asp Asn Asp Lys Glu Tyr Leu Val Leu Thr Leu
305 310 315 320

Thr Lys Asn Asp Leu Asp Lys Ala Asn Lys Asp Lys Ala Asn Arg Tyr
325 330 335

Phe Ser Pro Asn Phe Lys Val Lys Leu Tyr Phe Thr Lys Thr Val Glu
340 345 350

Glu Pro Ser Asn Pro Glu Ala Ser Ser Ser Thr Ser Val Thr Pro Asp
355 360 365

Val Ser Asp Asn Glu Pro Asp His Tyr Arg Tyr Ser Asp Thr Thr Asp
370 375 380

Ser Asp Pro Glu Asn Glu Pro Phe Asp Glu Asp Gln His Thr Gln Ile
385 390 395 400

Thr Lys Val

<210> 161
<211> 336
<212> PRT
<213> Human

<400> 161

Met Leu Gln Ser Leu Ala Gly Ser Ser Cys Val Arg Leu Val Glu Arg
1 5 10 15

His Arg Ser Ala Trp Cys Phe Gly Phe Leu Val Leu Gly Tyr Leu Leu
20 25 30

Tyr Leu Val Phe Gly Ala Val Val Phe Ser Ser Val Glu Leu Pro Tyr
35 40 45

Glu Asp Leu Leu Arg Gln Glu Leu Arg Lys Leu Lys Arg Arg Phe Leu
50 55 60

Glu Glu His Glu Cys Leu Ser Glu Gln Gln Leu Glu Gln Phe Leu Gly
65 70 75 80

Arg Val Leu Glu Ala Ser Asn Tyr Gly Val Ser Val Leu Ser Asn Ala
85 90 95

Ser Gly Asn Trp Asn Trp Asp Phe Thr Ser Ala Leu Phe Phe Ala Ser
100 105 110

Thr Val Leu Ser Thr Thr Gly Tyr Gly His Thr Val Pro Leu Ser Asp
115 120 125

Gly Gly Lys Ala Phe Cys Ile Ile Tyr Ser Val Ile Gly Ile Pro Phe
130 135 140

Thr Leu Leu Phe Leu Thr Ala Val Val Gln Arg Ile Thr Val His Val
145 150 155 160

Thr Arg Arg Pro Val Leu Tyr Phe His Ile Arg Trp Gly Phe Ser Lys
165 170 175

Gln Val Val Ala Ile Val His Ala Val Leu Leu Gly Phe Val Thr Val
180 185 190

Ser Cys Phe Phe Phe Ile Pro Ala Ala Val Phe Ser Val Leu Glu Asp
195 200 205

Asp Trp Asn Phe Leu Glu Ser Phe Tyr Phe Cys Phe Ile Ser Leu Ser
210 215 220

Thr Ile Gly Leu Gly Asp Tyr Val Pro Gly Glu Gly Tyr Asn Gln Lys
225 230 235 240

Phe Arg Glu Leu Tyr Lys Ile Gly Ile Thr Cys Tyr Leu Leu Leu Gly
245 250 255

Leu Ile Ala Met Leu Val Val Leu Glu Thr Phe Cys Glu Leu His Glu
260 265 270

Leu Lys Lys Phe Arg Lys Met Phe Tyr Val Lys Lys Asp Lys Asp Glu
275 280 285

Asp Gln Val His Ile Ile Glu His Asp Gln Leu Ser Phe Ser Ser Ile

290 295 300

Thr Asp Gln Ala Ala Gly Met Lys Glu Asp Gln Lys Gln Asn Glu Pro
305 310 315 320

Phe Val Ala Thr Gln Ser Ser Ala Cys Val Asp Gly Pro Ala Asn His
325 330 335

<210> 162
<211> 604
<212> PRT
<213> Human

<400> 162

Met Leu Ala Arg Ala Leu Leu Leu Cys Ala Val Leu Ala Leu Ser His
1 5 10 15

Thr Ala Asn Pro Cys Cys Ser His Pro Cys Gln Asn Arg Gly Val Cys
20 25 30

Met Ser Val Gly Phe Asp Gln Tyr Lys Cys Asp Cys Thr Arg Thr Gly
35 40 45

Phe Tyr Gly Glu Asn Cys Ser Thr Pro Glu Phe Leu Thr Arg Ile Lys
50 55 60

Leu Phe Leu Lys Pro Thr Pro Asn Thr Val His Tyr Ile Leu Thr His
65 70 75 80

Phe Lys Gly Phe Trp Asn Val Val Asn Asn Ile Pro Phe Leu Arg Asn
85 90 95

Ala Ile Met Ser Tyr Val Leu Thr Ser Arg Ser His Leu Ile Asp Ser
100 105 110

Pro Pro Thr Tyr Asn Ala Asp Tyr Gly Tyr Lys Ser Trp Glu Ala Phe
115 120 125

Ser Asn Leu Ser Tyr Tyr Thr Arg Ala Leu Pro Pro Val Pro Asp Asp
130 135 140

Cys Pro Thr Pro Leu Gly Val Lys Gly Lys Lys Gln Leu Pro Asp Ser
145 150 155 160

Asn Glu Ile Val Glu Lys Leu Leu Leu Arg Arg Lys Phe Ile Pro Asp

165 170 175

Pro Gln Gly Ser Asn Met Met Phe Ala Phe Phe Ala Gln His Phe Thr
180 185 190

His Gln Phe Phe Lys Thr Asp His Lys Arg Gly Pro Ala Phe Thr Asn
195 200 205

Gly Leu Gly His Gly Val Asp Leu Asn His Ile Tyr Gly Glu Thr Leu
210 215 220

Ala Arg Gln Arg Lys Leu Arg Leu Phe Lys Asp Gly Lys Met Lys Tyr
225 230 235 240

Gln Ile Ile Asp Gly Glu Met Tyr Pro Pro Thr Val Lys Asp Thr Gln
245 250 255

Ala Glu Met Ile Tyr Pro Pro Gln Val Pro Glu His Leu Arg Phe Ala
260 265 270

Val Gly Gln Glu Val Phe Gly Leu Val Pro Gly Leu Met Met Tyr Ala
275 280 285

Thr Ile Trp Leu Arg Glu His Asn Arg Val Cys Asp Val Leu Lys Gln
290 295 300

Glu His Pro Glu Trp Gly Asp Glu Gln Leu Phe Gln Thr Ser Arg Leu
305 310 315 320

Ile Leu Ile Gly Glu Thr Ile Lys Ile Val Ile Glu Asp Tyr Val Gln
325 330 335

His Leu Ser Gly Tyr His Phe Lys Leu Lys Phe Asp Pro Glu Leu Leu
340 345 350

Phe Asn Lys Gln Phe Gln Tyr Gln Asn Arg Ile Ala Ala Glu Phe Asn
355 360 365

Thr Leu Tyr His Trp His Pro Leu Leu Pro Asp Thr Phe Gln Ile His
370 375 380

Asp Gln Lys Tyr Asn Tyr Gln Gln Phe Ile Tyr Asn Asn Ser Ile Leu
385 390 395 400

Leu Glu His Gly Ile Thr Gln Phe Val Glu Ser Phe Thr Arg Gln Ile
405 410 415

Ala Gly Arg Val Ala Gly Gly Arg Asn Val Pro Pro Ala Val Gln Lys
420 425 430

Val Ser Gln Ala Ser Ile Asp Gln Ser Arg Gln Met Lys Tyr Gln Ser
435 440 445

Phe Asn Glu Tyr Arg Lys Arg Phe Met Leu Lys Pro Tyr Glu Ser Phe
450 455 460

Glu Glu Leu Thr Gly Glu Lys Glu Met Ser Ala Glu Leu Glu Ala Leu
465 470 475 480

Tyr Gly Asp Ile Asp Ala Val Glu Leu Tyr Pro Ala Leu Leu Val Glu
485 490 495

Lys Pro Arg Pro Asp Ala Ile Phe Gly Glu Thr Met Val Glu Val Gly
500 505 510

Ala Pro Phe Ser Leu Lys Gly Leu Met Gly Asn Val Ile Cys Ser Pro
515 520 525

Ala Tyr Trp Lys Pro Ser Thr Phe Gly Gly Glu Val Gly Phe Gln Ile
530 535 540

Ile Asn Thr Ala Ser Ile Gln Ser Leu Ile Cys Asn Asn Val Lys Gly
545 550 555 560

Cys Pro Phe Thr Ser Phe Ser Val Pro Asp Pro Glu Leu Ile Lys Thr
565 570 575

Val Thr Ile Asn Ala Ser Ser Ser Arg Ser Gly Leu Asp Asp Ile Asn
580 585 590

Pro Thr Val Leu Leu Lys Glu Arg Ser Thr Glu Leu
595 600

<210> 163
<211> 117
<212> PRT
<213> Human

<400> 163

Met Arg Ala Ser Ser Phe Leu Ile Val Val Val Phe Leu Ile Ala Gly
1   5   10   15

Thr Leu Val Leu Glu Ala Ala Val Thr Gly Val Pro Val Lys Gly Gln
            20   25   30

Asp Thr Val Lys Gly Arg Val Pro Phe Asn Gly Gln Asp Pro Val Lys
        35   40   45

Gly Gln Val Ser Val Lys Gly Gln Asp Lys Val Lys Ala Gln Glu Pro
    50   55   60

Val Lys Gly Pro Val Ser Thr Lys Pro Gly Ser Cys Pro Ile Ile Leu
65   70   75   80

Ile Arg Cys Ala Met Leu Asn Pro Pro Asn Arg Cys Leu Lys Asp Thr
                85   90   95

Asp Cys Pro Gly Ile Lys Lys Cys Cys Glu Gly Ser Cys Gly Met Ala
            100   105   110

Cys Phe Val Pro Gln
        115

<210> 164
<211> 464
<212> PRT
<213> Human

<400> 164

Met Ala Gly Gln Asp Pro Ala Leu Ser Thr Ser His Pro Phe Tyr Asp
1   5   10   15

Val Ala Arg His Gly Ile Leu Gln Val Ala Gly Asp Asp Arg Phe Gly
            20   25   30

Arg Arg Val Val Thr Phe Ser Cys Cys Arg Met Pro Pro Ser His Glu
        35   40   45

Leu Asp His Gln Arg Leu Leu Glu Tyr Leu Lys Tyr Thr Leu Asp Gln
    50   55   60

Tyr Val Glu Asn Asp Tyr Thr Ile Val Tyr Phe His Tyr Gly Leu Asn
65   70   75   80

```
Ser Arg Asn Lys Pro Ser Leu Gly Trp Leu Gln Ser Ala Tyr Lys Glu
                85                  90                  95

Phe Asp Arg Lys Asp Gly Asp Leu Thr Met Trp Pro Arg Leu Val Ser
            100                 105                 110

Asn Ser Lys Leu Lys Arg Ser Ser His Leu Ser Leu Pro Lys Tyr Trp
        115                 120                 125

Asp Tyr Arg Tyr Lys Lys Asn Leu Lys Ala Leu Tyr Val Val His Pro
    130                 135                 140

Thr Ser Phe Ile Lys Val Leu Trp Asn Ile Leu Lys Pro Leu Ile Ser
145                 150                 155                 160

His Lys Phe Gly Lys Lys Val Ile Tyr Phe Asn Tyr Leu Ser Glu Leu
                165                 170                 175

His Glu His Leu Lys Tyr Asp Gln Leu Val Ile Pro Pro Glu Val Leu
            180                 185                 190

Arg Tyr Asp Glu Lys Leu Gln Ser Leu His Glu Gly Arg Thr Pro Pro
        195                 200                 205

Pro Thr Lys Thr Pro Pro Pro Arg Pro Pro Leu Pro Thr Gln Gln Phe
    210                 215                 220

Gly Val Ser Leu Gln Tyr Leu Lys Asp Lys Asn Gln Gly Glu Leu Ile
225                 230                 235                 240

Pro Pro Val Leu Arg Phe Thr Val Thr Tyr Leu Arg Glu Lys Gly Leu
                245                 250                 255

Arg Thr Glu Gly Leu Phe Arg Arg Ser Ala Ser Val Gln Thr Val Arg
            260                 265                 270

Glu Ile Gln Arg Leu Tyr Asn Gln Gly Lys Pro Val Asn Phe Asp Asp
        275                 280                 285

Tyr Gly Asp Ile His Ile Pro Ala Val Ile Leu Lys Thr Phe Leu Arg
    290                 295                 300

Glu Leu Pro Gln Pro Leu Leu Thr Phe Gln Ala Tyr Glu Gln Ile Leu
305                 310                 315                 320
```

Gly Ile Thr Cys Val Glu Ser Ser Leu Arg Val Thr Gly Cys Arg Gln
325 330 335

Ile Leu Arg Ser Leu Pro Glu His Asn Tyr Val Val Leu Arg Tyr Leu
340 345 350

Met Gly Phe Leu His Ala Val Ser Arg Glu Ser Ile Phe Asn Lys Met
355 360 365

Asn Ser Ser Asn Leu Ala Cys Val Phe Gly Leu Asn Leu Ile Trp Pro
370 375 380

Ser Gln Gly Val Ser Ser Leu Ser Ala Leu Val Pro Leu Asn Met Phe
385 390 395 400

Thr Glu Leu Leu Ile Glu Tyr Tyr Glu Lys Ile Phe Ser Thr Pro Glu
405 410 415

Ala Pro Gly Glu His Gly Leu Ala Pro Trp Glu Gln Gly Ser Arg Ala
420 425 430

Ala Pro Leu Gln Glu Ala Val Pro Arg Thr Gln Ala Thr Gly Leu Thr
435 440 445

Lys Pro Thr Leu Pro Pro Ser Pro Leu Met Ala Ala Arg Arg Arg Leu
450 455 460

<210> 165
<211> 156
<212> PRT
<213> Human

<400> 165

Met Ala Leu Glu Lys Ser Leu Val Arg Leu Leu Leu Leu Val Leu Ile
1 5 10 15

Leu Leu Val Leu Gly Trp Val Gln Pro Ser Leu Gly Lys Glu Ser Arg
20 25 30

Ala Lys Lys Phe Gln Arg Gln His Met Asp Ser Asp Ser Ser Pro Ser
35 40 45

Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Arg Arg Arg Asn Met Thr
50 55 60

Gln Gly Arg Cys Lys Pro Val Asn Thr Phe Val His Glu Pro Leu Val
65 70 75 80

Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val Thr Cys Lys Asn Gly
85 90 95

Gln Gly Asn Cys Tyr Lys Ser Asn Ser Ser Met His Ile Thr Asp Cys
100 105 110

Arg Leu Thr Asn Gly Ser Arg Tyr Pro Asn Cys Ala Tyr Arg Thr Ser
115 120 125

Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu Gly Ser Pro Tyr Val
130 135 140

Pro Val His Phe Asp Ala Ser Val Glu Asp Ser Thr
145 150 155

<210> 166
<211> 375
<212> PRT
<213> Human

<400> 166

Met Asp Ala Leu Gln Leu Ala Asn Ser Ala Phe Ala Val Asp Leu Phe
1 5 10 15

Lys Gln Leu Cys Glu Lys Glu Pro Leu Gly Asn Val Leu Phe Ser Pro
20 25 30

Ile Cys Leu Ser Thr Ser Leu Ser Leu Ala Gln Val Gly Ala Lys Gly
35 40 45

Asp Thr Ala Asn Glu Ile Gly Gln Val Leu His Phe Glu Asn Val Lys
50 55 60

Asp Ile Pro Phe Gly Phe Gln Thr Val Thr Ser Asp Val Asn Lys Leu
65 70 75 80

Ser Ser Phe Tyr Ser Leu Lys Leu Ile Lys Arg Leu Tyr Val Asp Lys
85 90 95

Ser Leu Asn Leu Ser Thr Glu Phe Ile Ser Ser Thr Lys Arg Pro Tyr
100 105 110

Ala Lys Glu Leu Glu Thr Val Asp Phe Lys Asp Lys Leu Glu Glu Thr
115 120 125

Lys Gly Gln Ile Asn Asn Ser Ile Lys Asp Leu Thr Asp Gly His Phe
130 135 140

Glu Asn Ile Leu Ala Asp Asn Ser Val Asn Asp Gln Thr Lys Ile Leu
145 150 155 160

Val Val Asn Ala Ala Tyr Phe Val Gly Lys Trp Met Lys Lys Phe Pro
165 170 175

Glu Ser Glu Thr Lys Glu Cys Pro Phe Arg Leu Asn Lys Thr Asp Thr
180 185 190

Lys Pro Val Gln Met Met Asn Met Glu Ala Thr Phe Cys Met Gly Asn
195 200 205

Ile Asp Ser Ile Asn Cys Lys Ile Ile Glu Leu Pro Phe Gln Asn Lys
210 215 220

His Leu Ser Met Phe Ile Leu Leu Pro Lys Asp Val Glu Asp Glu Ser
225 230 235 240

Thr Gly Leu Glu Lys Ile Glu Lys Gln Leu Asn Ser Glu Ser Leu Ser
245 250 255

Gln Trp Thr Asn Pro Ser Thr Met Ala Asn Ala Lys Val Lys Leu Ser
260 265 270

Ile Pro Lys Phe Lys Val Glu Lys Met Ile Asp Pro Lys Ala Cys Leu
275 280 285

Glu Asn Leu Gly Leu Lys His Ile Phe Ser Glu Asp Thr Ser Asp Phe
290 295 300

Ser Gly Met Ser Glu Thr Lys Gly Val Ala Leu Ser Asn Val Ile His
305 310 315 320

Lys Val Cys Leu Glu Ile Thr Glu Asp Gly Gly Asp Ser Ile Glu Val
325 330 335

Pro Gly Ala Arg Ile Leu Gln His Lys Asp Glu Leu Asn Ala Asp His
340 345 350

Pro Phe Ile Tyr Ile Ile Arg His Asn Lys Thr Arg Asn Ile Ile Phe
355 360 365

Phe Gly Lys Phe Cys Ser Pro
370 375

<210> 167
<211> 240
<212> PRT
<213> Human

<400> 167

Met Leu Ala Leu Leu Cys Ser Cys Leu Leu Leu Ala Ala Gly Ala Ser
1 5 10 15

Asp Ala Trp Thr Gly Glu Asp Ser Ala Glu Pro Asn Ser Asp Ser Ala
20 25 30

Glu Trp Ile Arg Asp Met Tyr Ala Lys Val Thr Glu Ile Trp Gln Glu
35 40 45

Val Met Gln Arg Arg Asp Asp Asp Gly Thr Leu His Ala Ala Cys Gln
50 55 60

Val Gln Pro Ser Ala Thr Leu Asp Ala Ala Gln Pro Arg Val Thr Gly
65 70 75 80

Val Val Leu Phe Arg Gln Leu Ala Pro Arg Ala Lys Leu Asp Ala Phe
85 90 95

Phe Ala Leu Glu Gly Phe Pro Thr Glu Pro Asn Ser Ser Ser Arg Ala
100 105 110

Ile His Val His Gln Phe Gly Asp Leu Ser Gln Gly Cys Glu Ser Thr
115 120 125

Gly Pro His Tyr Asn Pro Leu Ala Val Pro His Pro Gln His Pro Gly
130 135 140

Asp Phe Gly Asn Phe Ala Val Arg Asp Gly Ser Leu Trp Arg Tyr Arg
145 150 155 160

Ala Gly Leu Ala Ala Ser Leu Ala Gly Pro His Ser Ile Val Gly Arg
165 170 175

Ala Val Val Val His Ala Gly Glu Asp Asp Leu Gly Arg Gly Gly Asn
180 185 190

Gln Ala Ser Val Glu Asn Gly Asn Ala Gly Arg Arg Leu Ala Cys Cys
195 200 205

Val Val Gly Val Cys Gly Pro Gly Leu Trp Glu Arg Gln Ala Arg Glu
210 215 220

His Ser Glu Arg Lys Lys Arg Arg Arg Glu Ser Glu Cys Lys Ala Ala
225 230 235 240

<210> 168
<211> 283
<212> PRT
<213> Human

<400> 168

Met Glu Pro Pro Gly Asp Trp Gly Pro Pro Pro Trp Arg Ser Thr Pro
1 5 10 15

Arg Thr Asp Val Leu Arg Leu Val Leu Tyr Leu Thr Phe Leu Gly Ala
20 25 30

Pro Cys Tyr Ala Pro Ala Leu Pro Ser Cys Lys Glu Asp Glu Tyr Pro
35 40 45

Val Gly Ser Glu Cys Cys Pro Lys Cys Ser Pro Gly Tyr Arg Val Lys
50 55 60

Glu Ala Cys Gly Glu Leu Thr Gly Thr Val Cys Glu Pro Cys Pro Pro
65 70 75 80

Gly Thr Tyr Ile Ala His Leu Asn Gly Leu Ser Lys Cys Leu Gln Cys
85 90 95

Gln Met Cys Asp Pro Ala Met Gly Leu Arg Ala Ser Arg Asn Cys Ser
100 105 110

Arg Thr Glu Asn Ala Val Cys Gly Cys Ser Pro Gly His Phe Cys Ile
115 120 125

Val Gln Asp Gly Asp His Cys Ala Ala Cys Arg Ala Tyr Ala Thr Ser
130 135 140

Ser Pro Gly Gln Arg Val Gln Lys Gly Gly Thr Glu Ser Gln Asp Thr
145 150 155 160

Leu Cys Gln Asn Cys Pro Pro Gly Thr Phe Ser Pro Asn Gly Thr Leu
165 170 175

Glu Glu Cys Gln His Gln Thr Lys Cys Ser Trp Leu Val Thr Lys Ala
180 185 190

Gly Ala Gly Thr Ser Ser Ser His Trp Val Trp Trp Phe Leu Ser Gly
195 200 205

Ser Leu Val Ile Val Ile Val Cys Ser Thr Val Gly Leu Ile Ile Cys
210 215 220

Val Lys Arg Arg Lys Pro Arg Gly Asp Val Val Lys Val Ile Val Ser
225 230 235 240

Val Gln Arg Lys Arg Gln Glu Ala Glu Gly Glu Ala Thr Val Ile Glu
245 250 255

Ala Leu Gln Ala Pro Pro Asp Val Thr Thr Val Ala Val Glu Glu Thr
260 265 270

Ile Pro Ser Phe Thr Gly Arg Ser Pro Asn His
275 280

<210> 169
<211> 335
<212> PRT
<213> Human

<400> 169

Met Leu Gly Ile Trp Thr Leu Leu Pro Leu Val Leu Thr Ser Val Ala
1 5 10 15

Arg Leu Ser Ser Lys Ser Val Asn Ala Gln Val Thr Asp Ile Asn Ser
20 25 30

Lys Gly Leu Glu Leu Arg Lys Thr Val Thr Thr Val Glu Thr Gln Asn
35 40 45

Leu Glu Gly Leu His His Asp Gly Gln Phe Cys His Lys Pro Cys Pro
50 55 60

Pro Gly Glu Arg Lys Ala Arg Asp Cys Thr Val Asn Gly Asp Glu Pro
65 70 75 80

Asp Cys Val Pro Cys Gln Glu Gly Lys Glu Tyr Thr Asp Lys Ala His
85 90 95

Phe Ser Ser Lys Cys Arg Arg Cys Arg Leu Cys Asp Glu Gly His Gly
100 105 110

Leu Glu Val Glu Ile Asn Cys Thr Arg Thr Gln Asn Thr Lys Cys Arg
115 120 125

Cys Lys Pro Asn Phe Phe Cys Asn Ser Thr Val Cys Glu His Cys Asp
130 135 140

Pro Cys Thr Lys Cys Glu His Gly Ile Ile Lys Glu Cys Thr Leu Thr
145 150 155 160

Ser Asn Thr Lys Cys Lys Glu Glu Gly Ser Arg Ser Asn Leu Gly Trp
165 170 175

Leu Cys Leu Leu Leu Leu Pro Ile Pro Leu Ile Val Trp Val Lys Arg
180 185 190

Lys Glu Val Gln Lys Thr Cys Arg Lys His Arg Lys Glu Asn Gln Gly
195 200 205

Ser His Glu Ser Pro Thr Leu Asn Pro Glu Thr Val Ala Ile Asn Leu
210 215 220

Ser Asp Val Asp Leu Ser Lys Tyr Ile Thr Thr Ile Ala Gly Val Met
225 230 235 240

Thr Leu Ser Gln Val Lys Gly Phe Val Arg Lys Asn Gly Val Asn Glu
245 250 255

Ala Lys Ile Asp Glu Ile Lys Asn Asp Asn Val Gln Asp Thr Ala Glu
260 265 270

Gln Lys Val Gln Leu Leu Arg Asn Trp His Gln Leu His Gly Lys Lys
275 280 285

Glu Ala Tyr Asp Thr Leu Ile Lys Asp Leu Lys Lys Ala Asn Leu Cys

290 295 300

Thr Leu Ala Glu Lys Ile Gln Thr Ile Ile Leu Lys Asp Ile Thr Ser
305 310 315 320

Asp Ser Glu Asn Ser Asn Phe Arg Asn Glu Ile Gln Ser Leu Val
325 330 335

<210> 170
<211> 207
<212> PRT
<213> Human

<400> 170

Met Asn Val Ala Arg Phe Leu Val Glu Lys His Thr Leu His Val Ile
1 5 10 15

Ile Asp Phe Ile Leu Ser Lys Val Ser Asn Gln Gln Ser Asn Leu Ala
20 25 30

Gln His Gln Arg Val Tyr Thr Gly Glu Lys Pro Tyr Lys Cys Asn Glu
35 40 45

Trp Gly Lys Ala Leu Ser Gly Lys Ser Ser Leu Phe Tyr His Gln Ala
50 55 60

Ile His Gly Val Gly Lys Leu Cys Lys Cys Asn Asp Cys His Lys Val
65 70 75 80

Phe Ser Asn Ala Thr Thr Ile Ala Asn His Trp Arg Ile His Asn Glu
85 90 95

Asp Arg Ser Tyr Lys Cys Asn Lys Cys Gly Lys Ile Phe Arg His Arg
100 105 110

Ser Tyr Leu Ala Val Tyr Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
115 120 125

Lys Tyr His Asp Cys Gly Lys Val Phe Ser Gln Ala Ser Ser Tyr Ala
130 135 140

Lys His Arg Arg Ile His Thr Gly Glu Lys Pro His Lys Cys Asp Asp
145 150 155 160

Cys Gly Lys Val Leu Thr Ser Arg Ser His Leu Ile Arg His Gln Arg

```
                165                 170                 175

Ile His Thr Gly Gln Lys Ser Tyr Lys Cys Leu Lys Cys Gly Lys Val
            180                 185                 190

Phe Ser Leu Trp Ala Leu His Ala Glu His Gln Lys Ile His Phe
        195                 200                 205


<210>  171
<211>  158
<212>  PRT
<213>  Human

<400>  171

Met Ala Ser Arg Ser Met Arg Leu Leu Leu Leu Leu Ser Cys Leu Ala
1               5                   10                  15

Lys Thr Gly Val Leu Gly Asp Ile Ile Met Arg Pro Ser Cys Ala Pro
            20                  25                  30

Gly Trp Phe Tyr His Lys Ser Asn Cys Tyr Gly Tyr Phe Arg Lys Leu
        35                  40                  45

Arg Asn Trp Ser Asp Ala Glu Leu Glu Cys Gln Ser Tyr Gly Asn Gly
    50                  55                  60

Ala His Leu Ala Ser Ile Leu Ser Leu Lys Glu Ala Ser Thr Ile Ala
65                  70                  75                  80

Glu Tyr Ile Ser Gly Tyr Gln Arg Ser Gln Pro Ile Trp Ile Gly Leu
                85                  90                  95

His Asp Pro Gln Lys Arg Gln Gln Trp Gln Trp Ile Asp Gly Ala Met
            100                 105                 110

Tyr Leu Tyr Arg Ser Trp Ser Gly Lys Ser Met Gly Gly Asn Lys His
        115                 120                 125

Cys Ala Glu Met Ser Ser Asn Asn Asn Phe Leu Thr Trp Ser Ser Asn
    130                 135                 140

Glu Cys Asn Lys Arg Gln His Phe Leu Cys Lys Tyr Arg Pro
145                 150                 155


<210>  172
```

<211> 432
<212> PRT
<213> Human

<400> 172

Met Gly Pro Ala Gly Ser Leu Leu Gly Ser Gly Gln Met Gln Ile Thr
1 5 10 15

Leu Trp Gly Ser Leu Ala Ala Val Ala Ile Phe Phe Val Ile Thr Phe
20 25 30

Leu Ile Phe Pro Cys Ser Ser Cys Asp Arg Glu Lys Lys Pro Arg Gln
35 40 45

His Ser Gly Asp His Glu Asn Leu Met Asn Val Pro Ser Asp Lys Glu
50 55 60

Met Phe Ser Arg Ser Val Thr Ser Leu Ala Thr Asp Ala Pro Ala Ser
65 70 75 80

Ser Glu Gln Asn Gly Ala Leu Thr Asn Gly Asp Ile Leu Ser Glu Asp
85 90 95

Ser Thr Leu Thr Cys Met Gln His Tyr Glu Glu Val Gln Thr Ser Ala
100 105 110

Ser Asp Leu Leu Asp Ser Gln Asp Ser Thr Gly Lys Pro Lys Cys His
115 120 125

Gln Ser Arg Glu Leu Pro Arg Ile Pro Pro Glu Ser Ala Val Asp Thr
130 135 140

Met Leu Thr Ala Arg Ser Val Asp Gly Asp Gln Gly Leu Gly Met Glu
145 150 155 160

Gly Pro Tyr Glu Val Leu Lys Asp Ser Ser Ser Gln Glu Asn Met Val
165 170 175

Glu Asp Cys Leu Tyr Glu Thr Val Lys Glu Ile Lys Glu Val Ala Ala
180 185 190

Ala Ala His Leu Glu Lys Gly His Ser Gly Lys Ala Lys Ser Thr Ser
195 200 205

Ala Ser Lys Glu Leu Pro Gly Pro Gln Thr Glu Gly Lys Ala Glu Phe

210 215 220

Ala Glu Tyr Ala Ser Val Asp Arg Asn Lys Lys Cys Arg Gln Ser Val
225 230 235 240

Asn Val Glu Ser Ile Leu Gly Asn Ser Cys Asp Pro Glu Glu Glu Ala
245 250 255

Pro Pro Pro Val Pro Val Lys Leu Leu Asp Glu Asn Glu Asn Leu Gln
260 265 270

Glu Lys Glu Gly Gly Glu Ala Glu Glu Ser Ala Thr Asp Thr Thr Ser
275 280 285

Glu Thr Asn Lys Arg Phe Ser Ser Leu Ser Tyr Lys Ser Arg Glu Glu
290 295 300

Asp Pro Thr Leu Thr Glu Glu Glu Ile Ser Ala Met Tyr Ser Ser Val
305 310 315 320

Asn Lys Pro Gly Gln Leu Val Asn Lys Ser Gly Gln Ser Leu Thr Val
325 330 335

Pro Glu Ser Thr Tyr Thr Ser Ile Gln Gly Asp Pro Gln Arg Ser Pro
340 345 350

Ser Ser Cys Asn Asp Leu Tyr Ala Thr Val Lys Asp Phe Glu Lys Thr
355 360 365

Pro Asn Ser Thr Leu Pro Pro Ala Gly Arg Pro Ser Glu Glu Pro Glu
370 375 380

Pro Asp Tyr Glu Ala Ile Gln Thr Leu Asn Arg Glu Glu Glu Lys Ala
385 390 395 400

Thr Leu Gly Thr Asn Gly His His Gly Leu Val Pro Lys Glu Asn Asp
405 410 415

Tyr Glu Ser Ile Ser Asp Leu Gln Gln Gly Arg Asp Ile Thr Arg Leu
420 425 430

<210> 173
<211> 174
<212> PRT
<213> Human

<400> 173

Lys Pro Phe Arg Cys Glu Asn Cys Asn Glu Arg Phe Gln Tyr Lys Tyr
1   5   10   15

Gln Leu Arg Ser His Met Ser Ile His Ile Gly His Lys Gln Phe Met
            20   25   30

Cys Gln Trp Cys Gly Lys Asp Phe Asn Met Lys Gln Tyr Phe Asp Glu
        35   40   45

His Met Lys Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Glu Ile Cys
    50   55   60

Gly Lys Ser Phe Thr Ser Arg Pro Asn Met Lys Arg His Arg Arg Thr
65   70   75   80

His Thr Gly Glu Lys Pro Tyr Pro Cys Asp Val Cys Gly Gln Arg Phe
                85   90   95

Arg Phe Ser Asn Met Leu Lys Ala His Lys Glu Lys Cys Phe Arg Val
            100   105   110

Ser His Thr Leu Ala Gly Asp Gly Val Pro Ala Ala Pro Gly Leu Pro
        115   120   125

Pro Thr Gln Pro Gln Ala His Ala Leu Pro Leu Leu Pro Gly Leu Pro
    130   135   140

Gln Thr Leu Pro Pro Pro Pro His Leu Pro Pro Pro Pro Pro Leu Phe
145   150   155   160

Pro Thr Thr Ala Ser Pro Gly Gly Arg Met Asn Ala Asn Asn
                165   170

<210> 174
<211> 917
<212> PRT
<213> Human

<400> 174

Ala Ser Pro Arg Gly Thr Glu Ala Ser Pro Pro Gln Asn Asn Ser Gly
1   5   10   15

Ser Ser Ser Pro Val Phe Thr Phe Arg His Pro Leu Leu Ser Ser Gly

20 25 30

Gly Pro Gln Ser Pro Leu Arg Gly Ser Thr Gly Ser Leu Lys Ser Ser
35 40 45

Pro Ser Met Ser His Met Glu Ala Leu Gly Lys Ala Trp Asn Arg Gln
50 55 60

Leu Ser Arg Pro Leu Ser Gln Ala Val Ser Phe Ser Thr Pro Phe Gly
65 70 75 80

Leu Asp Ser Asp Val Asp Val Val Met Gly Asp Pro Val Leu Leu Arg
85 90 95

Ser Val Ser Ser Asp Ser Leu Gly Pro Pro Arg Pro Ala Pro Ala Arg
100 105 110

Thr Pro Thr Gln Pro Pro Pro Glu Pro Gly Asp Leu Pro Thr Ile Glu
115 120 125

Glu Ala Leu Gln Ile Ile His Ser Ala Glu Pro Arg Leu Leu Pro Asp
130 135 140

Gly Ala Ala Asp Gly Ser Phe Tyr Leu His Ser Pro Glu Gly Pro Ser
145 150 155 160

Lys Pro Ser Leu Ala Ser Pro Tyr Leu Pro Glu Gly Thr Ser Lys Pro
165 170 175

Leu Ser Asp Arg Pro Thr Lys Ala Pro Val Tyr Met Pro His Pro Glu
180 185 190

Thr Pro Ser Lys Pro Ser Pro Cys Leu Val Gly Glu Ala Ser Lys Pro
195 200 205

Pro Ala Pro Ser Glu Gly Ser Pro Lys Ala Val Ala Ser Ser Pro Ala
210 215 220

Ala Thr Asn Ser Glu Val Lys Met Thr Ser Phe Ala Glu Arg Lys Lys
225 230 235 240

Gln Leu Val Lys Ala Glu Ala Glu Ala Gly Ala Gly Ser Pro Thr Ser
245 250 255

```
Thr Pro Ala Pro Pro Glu Ala Leu Ser Ser Glu Met Ser Glu Leu Ser
            260                 265                 270

Ala Arg Leu Glu Glu Lys Arg Arg Ala Ile Glu Ala Gln Lys Arg Arg
        275                 280                 285

Ile Glu Ala Ile Phe Ala Lys His Arg Gln Arg Leu Gly Lys Ser Ala
    290                 295                 300

Phe Leu Gln Val Gln Pro Arg Glu Ala Ser Gly Glu Ala Glu Ala Glu
305                 310                 315                 320

Ala Glu Glu Ala Asp Ser Gly Pro Val Pro Gly Gly Glu Arg Pro Ala
                325                 330                 335

Gly Glu Gly Gln Gly Glu Pro Thr Ser Arg Pro Lys Ala Val Thr Phe
            340                 345                 350

Ser Pro Asp Leu Gly Pro Val Pro His Glu Gly Leu Gly Glu Tyr Asn
        355                 360                 365

Arg Ala Val Ser Lys Leu Ser Ala Ala Leu Ser Ser Leu Gln Arg Asp
    370                 375                 380

Met Gln Arg Leu Thr Asp Gln Gln Gln Arg Leu Leu Ala Pro Pro Glu
385                 390                 395                 400

Ala Pro Gly Ser Ala Pro Pro Pro Ala Ala Trp Val Ile Pro Gly Pro
                405                 410                 415

Thr Thr Gly Pro Lys Ala Ala Ser Pro Ser Pro Ala Arg Arg Val Pro
            420                 425                 430

Ala Thr Arg Arg Ser Pro Gly Pro Gly Pro Ser Gln Ser Pro Arg Ser
        435                 440                 445

Pro Lys His Thr Arg Pro Ala Glu Leu Arg Leu Ala Pro Leu Thr Arg
    450                 455                 460

Val Leu Thr Pro Pro His Asp Val Asp Ser Leu Pro His Leu Arg Lys
465                 470                 475                 480

Phe Ser Pro Ser Gln Val Pro Val Gln Thr Arg Ser Ser Ile Leu Leu
                485                 490                 495
```

Ala Glu Glu Thr Pro Pro Glu Glu Pro Ala Ala Arg Pro Gly Leu Ile
500 505 510

Glu Ile Pro Leu Gly Ser Leu Ala Asp Pro Ala Ala Glu Asp Glu Gly
515 520 525

Asp Gly Ser Pro Ala Gly Ala Glu Asp Ser Leu Glu Glu Glu Ala Ser
530 535 540

Ser Glu Gly Glu Pro Arg Val Gly Leu Gly Phe Phe Tyr Lys Asp Glu
545 550 555 560

Asp Lys Pro Glu Asp Glu Met Ala Gln Lys Arg Ala Ser Leu Leu Glu
565 570 575

Arg Gln Gln Arg Arg Ala Glu Glu Ala Arg Arg Arg Lys Gln Trp Gln
580 585 590

Glu Val Glu Lys Glu Gln Arg Arg Glu Glu Ala Ala Arg Leu Ala Gln
595 600 605

Glu Glu Ala Pro Gly Pro Ala Pro Leu Val Ser Ala Val Pro Met Ala
610 615 620

Thr Pro Ala Pro Ala Ala Arg Ala Pro Ala Glu Glu Glu Val Gly Pro
625 630 635 640

Arg Lys Gly Asp Phe Thr Arg Gln Glu Tyr Glu Arg Arg Ala Gln Leu
645 650 655

Lys Leu Met Asp Asp Leu Asp Lys Val Leu Arg Pro Arg Ala Ala Gly
660 665 670

Ser Gly Gly Pro Gly Arg Gly Gly Arg Arg Ala Thr Arg Pro Arg Ser
675 680 685

Gly Cys Cys Asp Asp Ser Ala Leu Ala Arg Ser Pro Ala Arg Gly Leu
690 695 700

Leu Gly Ser Arg Leu Ser Lys Ile Tyr Ser Gln Ser Thr Leu Ser Leu
705 710 715 720

Ser Thr Val Ala Asn Glu Ala His Asn Asn Leu Gly Val Lys Arg Pro
725 730 735

Thr Ser Arg Ala Pro Ser Pro Ser Gly Leu Met Ser Pro Ser Arg Leu
740 745 750

Pro Gly Ser Arg Glu Arg Asp Trp Glu Asn Gly Ser Asn Ala Ser Ser
755 760 765

Pro Ala Ser Val Pro Glu Tyr Thr Gly Pro Arg Leu Tyr Lys Glu Pro
770 775 780

Ser Ala Lys Ser Asn Lys Phe Ile Ile His Asn Ala Leu Ser His Cys
785 790 795 800

Cys Leu Ala Gly Lys Val Asn Glu Pro Gln Lys Asn Arg Ile Leu Glu
805 810 815

Glu Ile Glu Lys Ser Lys Ala Asn His Phe Leu Ile Leu Phe Arg Asp
820 825 830

Ser Ser Cys Gln Phe Arg Ala Leu Tyr Thr Leu Ser Gly Glu Thr Glu
835 840 845

Glu Leu Ser Arg Leu Ala Gly Tyr Gly Pro Arg Thr Val Thr Pro Ala
850 855 860

Met Val Glu Gly Ile Tyr Lys Tyr Asn Ser Asp Arg Lys Arg Phe Thr
865 870 875 880

Gln Ile Pro Ala Lys Thr Met Ser Met Ser Val Asp Ala Phe Thr Ile
885 890 895

Gln Gly His Leu Trp Gln Gly Lys Lys Pro Thr Thr Pro Lys Lys Gly
900 905 910

Gly Gly Thr Pro Lys
915

<210> 175
<211> 600
<212> PRT
<213> Human

<400> 175

Met Arg Ser Cys Leu Trp Arg Cys Arg His Leu Ser Gln Gly Val Gln
1 5 10 15

Trp Ser Leu Leu Leu Ala Val Leu Val Phe Phe Leu Phe Ala Leu Pro
20 25 30

Ser Phe Ile Lys Glu Pro Gln Thr Lys Pro Ser Arg His Gln Arg Thr
35 40 45

Glu Asn Ile Lys Glu Arg Ser Leu Gln Ser Leu Ala Lys Pro Lys Ser
50 55 60

Gln Ala Pro Thr Arg Ala Arg Arg Thr Thr Ile Tyr Ala Glu Pro Val
65 70 75 80

Pro Glu Asn Asn Ala Leu Asn Thr Gln Thr Gln Pro Lys Ala His Thr
85 90 95

Thr Gly Asp Arg Gly Lys Glu Ala Asn Gln Ala Pro Pro Glu Glu Gln
100 105 110

Asp Lys Val Pro His Thr Ala Gln Arg Ala Ala Trp Lys Ser Pro Glu
115 120 125

Lys Glu Lys Thr Met Val Asn Thr Leu Ser Pro Arg Gly Gln Asp Ala
130 135 140

Gly Met Ala Ser Gly Arg Thr Glu Ala Gln Ser Trp Lys Ser Gln Asp
145 150 155 160

Thr Lys Thr Thr Gln Gly Asn Gly Gly Gln Thr Arg Lys Leu Thr Ala
165 170 175

Ser Arg Thr Val Ser Glu Lys His Gln Gly Lys Ala Ala Thr Thr Ala
180 185 190

Lys Thr Leu Ile Pro Lys Ser Gln His Arg Met Leu Ala Pro Thr Gly
195 200 205

Ala Val Ser Thr Arg Thr Arg Gln Lys Gly Val Thr Thr Ala Val Ile
210 215 220

Pro Pro Lys Glu Lys Lys Pro Gln Ala Thr Pro Pro Pro Ala Pro Phe
225 230 235 240

Gln Ser Pro Thr Thr Gln Arg Asn Gln Arg Leu Lys Ala Ala Asn Phe

245 250 255

Lys Ser Glu Pro Arg Trp Asp Phe Glu Glu Lys Tyr Ser Phe Glu Ile
260 265 270

Gly Gly Leu Gln Thr Thr Cys Pro Asp Ser Val Lys Ile Lys Ala Ser
275 280 285

Lys Ser Leu Trp Leu Gln Lys Leu Phe Leu Pro Asn Leu Thr Leu Phe
290 295 300

Leu Asp Ser Arg His Phe Asn Gln Ser Glu Trp Asp Arg Leu Glu His
305 310 315 320

Phe Ala Pro Pro Phe Gly Phe Met Glu Leu Asn Tyr Ser Leu Val Gln
325 330 335

Lys Val Val Thr Arg Phe Pro Pro Val Pro Gln Gln Gln Leu Leu Leu
340 345 350

Ala Ser Leu Pro Ala Gly Ser Leu Arg Cys Ile Thr Cys Ala Val Val
355 360 365

Gly Asn Gly Gly Ile Leu Asn Asn Ser His Met Gly Gln Glu Ile Asp
370 375 380

Ser His Asp Tyr Val Phe Arg Leu Ser Gly Ala Leu Ile Lys Gly Tyr
385 390 395 400

Glu Gln Asp Val Gly Thr Arg Thr Ser Phe Tyr Gly Phe Thr Ala Phe
405 410 415

Ser Leu Thr Gln Ser Leu Leu Ile Leu Gly Asn Arg Gly Phe Lys Asn
420 425 430

Val Pro Leu Gly Lys Asp Val Arg Tyr Leu His Phe Leu Glu Gly Thr
435 440 445

Arg Asp Tyr Glu Trp Leu Glu Ala Leu Leu Met Asn Gln Thr Val Met
450 455 460

Ser Lys Asn Leu Phe Trp Phe Arg His Arg Pro Gln Glu Ala Phe Arg
465 470 475 480

Glu Ala Leu His Met Asp Arg Tyr Leu Leu Leu His Pro Asp Phe Leu
485 490 495

Arg Tyr Met Lys Asn Arg Phe Leu Arg Ser Lys Thr Leu Asp Gly Ala
500 505 510

His Trp Arg Ile Tyr Arg Pro Thr Thr Gly Ala Leu Leu Leu Leu Thr
515 520 525

Ala Leu Gln Leu Cys Asp Gln Val Ser Ala Tyr Gly Phe Ile Thr Glu
530 535 540

Gly His Glu Arg Phe Ser Asp His Tyr Tyr Asp Thr Ser Trp Lys Arg
545 550 555 560

Leu Ile Phe Tyr Ile Asn His Asp Phe Lys Leu Glu Arg Glu Val Trp
565 570 575

Lys Arg Leu His Asp Glu Gly Ile Ile Arg Leu Tyr Gln Arg Pro Gly
580 585 590

Pro Gly Thr Ala Lys Ala Lys Asn
595 600

<210> 176
<211> 312
<212> PRT
<213> Human

<400> 176

Met Asp Gly Glu Asn His Ser Val Val Ser Glu Phe Leu Phe Leu Gly
1 5 10 15

Leu Thr His Ser Trp Glu Ile Gln Leu Leu Leu Leu Val Phe Ser Ser
20 25 30

Val Leu Tyr Val Ala Ser Ile Thr Gly Asn Ile Leu Ile Val Phe Ser
35 40 45

Val Thr Thr Asp Pro His Leu His Ser Pro Met Tyr Phe Leu Leu Ala
50 55 60

Ser Leu Ser Phe Ile Asp Leu Gly Ala Cys Ser Val Thr Ser Pro Lys
65 70 75 80

Met Ile Tyr Asp Leu Phe Arg Lys Arg Lys Val Ile Ser Phe Gly Gly
85 90 95

Cys Ile Ala Gln Ile Phe Phe Ile His Val Ile Gly Gly Val Glu Met
100 105 110

Val Leu Leu Ile Ala Met Ala Phe Asp Arg Tyr Val Ala Leu Cys Lys
115 120 125

Pro Leu His Tyr Leu Thr Ile Met Ser Pro Arg Met Cys Leu Ser Phe
130 135 140

Leu Ala Val Ala Trp Thr Leu Gly Val Ser His Ser Leu Phe Gln Leu
145 150 155 160

Ala Phe Leu Val Asn Leu Ala Phe Cys Gly Pro Asn Val Leu Asp Ser
165 170 175

Phe Tyr Cys Asp Leu Pro Arg Leu Leu Arg Leu Ala Cys Thr Asp Thr
180 185 190

Tyr Arg Leu Gln Phe Met Val Thr Val Asn Ser Gly Phe Ile Cys Val
195 200 205

Gly Thr Phe Phe Ile Leu Leu Ile Ser Tyr Val Phe Ile Leu Phe Thr
210 215 220

Val Trp Lys His Ser Ser Gly Gly Ser Ser Lys Ala Leu Ser Thr Leu
225 230 235 240

Ser Ala His Ser Thr Val Val Leu Leu Phe Phe Gly Pro Pro Met Phe
245 250 255

Val Tyr Thr Arg Pro His Pro Asn Ser Gln Met Asp Lys Phe Leu Ala
260 265 270

Ile Phe Asp Ala Val Leu Thr Pro Phe Leu Asn Pro Val Val Tyr Thr
275 280 285

Phe Arg Asn Lys Glu Met Lys Ala Ala Ile Lys Arg Val Cys Lys Gln
290 295 300

Leu Val Ile Tyr Lys Arg Ile Ser
305 310

<210> 177
<211> 114
<212> PRT
<213> Human

<400> 177

Met Ala Leu Glu His Leu Val Val Trp His Val His Ser Glu Asp Gln
1   5   10   15

Ser Phe Val Val Leu Lys Thr Asp Leu Gly Arg Arg Gly Cys Arg Pro
            20   25   30

Leu Arg Lys Thr Ala Pro Lys Ala Lys Glu Ala Pro Ala Pro Pro Lys
        35   40   45

Ala Glu Ala Lys Val Lys Ala Leu Lys Ala Lys Lys Ala Val Leu Lys
    50   55   60

Gly Val Arg Ser His Thr Gln Lys Arg Arg Ser Ala Cys His Ser Pro
65   70   75   80

Ser Gly Gly Pro Arg His Cys Asp Ser Gly Gly Ser Pro Asp Ile Leu
                85   90   95

Gly Arg Ala Pro Pro Gly Glu Thr Ser Leu Ala Thr Met Leu Ser Ser
            100   105   110

Phe Arg

<210> 178
<211> 430
<212> PRT
<213> Human

<400> 178

Asp Ser Met Thr Phe Glu Asp Ile Ile Val Asp Phe Thr Gln Glu Glu
1   5   10   15

Trp Ala Leu Leu Asp Thr Ser Gln Arg Lys Leu Phe Gln Asp Val Met
            20   25   30

Leu Glu Asn Ile Ser His Leu Val Ser Ile Gly Glu Asp Phe Thr Gln
        35   40   45

His Ile Ala Leu Thr Gln Asn Val Ile Thr Tyr Met Arg Thr Lys His
50 55 60

Phe Val Ser Lys Lys Phe Gly Lys Ile Phe Ser Asp Trp Leu Ser Phe
65 70 75 80

Asn Gln His Lys Glu Ile His Thr Lys Cys Lys Ser Tyr Gly Ser His
85 90 95

Leu Phe Asp Tyr Ala Phe Ile Gln Asn Ser Ala Leu Arg Pro His Ser
100 105 110

Val Thr His Thr Arg Glu Ile Thr Leu Glu Cys Arg Val Cys Gly Lys
115 120 125

Thr Phe Ser Lys Asn Ser Asn Leu Arg Arg His Glu Met Ile His Thr
130 135 140

Gly Glu Lys Pro His Gly Cys His Leu Cys Gly Lys Ala Phe Thr His
145 150 155 160

Cys Ser Asp Leu Arg Lys His Glu Arg Thr His Thr Gly Glu Lys Pro
165 170 175

Tyr Gly Cys His Leu Cys Gly Lys Ala Phe Ser Lys Ser Ser Asn Leu
180 185 190

Arg Arg His Glu Met Ile His Thr Arg Glu Lys Ala Gln Ile Cys His
195 200 205

Leu Cys Gly Lys Ala Phe Thr His Cys Ser Asp Leu Arg Lys His Glu
210 215 220

Arg Thr His Leu Gly Asp Lys Pro Tyr Gly Cys Leu Leu Cys Gly Lys
225 230 235 240

Ala Phe Ser Lys Cys Ser Tyr Leu Arg Gln His Glu Arg Thr His Asn
245 250 255

Gly Glu Lys Pro Tyr Glu Cys His Leu Cys Gly Lys Ala Phe Ser His
260 265 270

Cys Ser His Leu Arg Gln His Glu Arg Ser His Asn Gly Glu Lys Pro
275 280 285

His Gly Cys His Leu Cys Gly Lys Ala Phe Thr Glu Ser Ser Val Leu
    290   295   300

Lys Arg His Glu Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys His
305   310   315   320

Val Cys Gly Lys Ala Phe Thr Glu Ser Ser Asp Leu Arg Arg His Glu
                325   330   335

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys His Leu Cys Gly Lys
            340   345   350

Ala Phe Asn His Ser Ser Val Leu Arg Arg His Glu Arg Thr His Thr
        355   360   365

Gly Glu Lys Pro Tyr Glu Cys Asn Ile Cys Gly Lys Ala Phe Asn Arg
    370   375   380

Ser Tyr Asn Phe Arg Leu His Arg Arg Val His Thr Gly Glu Lys Pro
385   390   395   400

Tyr Val Cys Pro Leu Cys Gly Lys Ala Phe Ser Lys Phe Phe Asn Leu
                405   410   415

Arg Gln His Glu Arg Thr His Thr Lys Lys Ala Met Asn Met
            420   425   430

<210> 179
<211> 15
<212> DNA
<213> Murine

<400> 179
aactatggtg tacac 15

<210> 180
<211> 5
<212> PRT
<213> Murine

<400> 180

Asn Tyr Gly Val His
1   5

<210> 181
<211> 48

<212> DNA
<213> Murine

<400> 181
gtgatatgga gtggtggaaa cacagactat aatacacctt tcacatcc 48

<210> 182
<211> 16
<212> PRT
<213> Murine

<400> 182

Val Ile Trp Ser Gly Gly Asn Thr Asp Tyr Asn Thr Pro Phe Thr Ser
1 5 10 15

<210> 183
<211> 33
<212> DNA
<213> Murine

<400> 183
gccctcacct actatgatta cgagtttgct tac 33

<210> 184
<211> 11
<212> PRT
<213> Murine

<400> 184

Ala Leu Thr Tyr Tyr Asp Tyr Glu Phe Ala Tyr
1 5 10

<210> 185
<211> 33
<212> DNA
<213> Murine

<400> 185
agggccagtc agagtattgg cacaaacata cac 33

<210> 186
<211> 11
<212> PRT
<213> Murine

<400> 186

Arg Ala Ser Gln Ser Ile Gly Thr Asn Ile His
1 5 10

<210> 187

<211> 18
<212> DNA
<213> Murine

<400> 187
gcttctgagt ctatctct 18

<210> 188
<211> 6
<212> PRT
<213> Murine

<400> 188

Ala Ser Glu Ser Ile Ser
1 5

<210> 189
<211> 27
<212> DNA
<213> Murine

<400> 189
caacaaaata ataactggcc aaccacg 27

<210> 190
<211> 9
<212> PRT
<213> Murine

<400> 190

Gln Gln Asn Asn Asn Trp Pro Thr Thr
1 5

<210> 191
<211> 17
<212> DNA
<213> Artificial

<220>
<223> GAPDH oligonucleotide

<400> 191
agccgagcca catcgct 17

<210> 192
<211> 19
<212> DNA
<213> Artificial

<220>
<223> GAPDH oligonucleotide

<400> 192
gtgaccaggc gcccaatac 19

<210> 193
<211> 19
<212> DNA
<213> Artificial

<220>
<223> EGFR oligonucleotide

<400> 193
gcgtctcttg ccggaatgt 19

<210> 194
<211> 21
<212> DNA
<213> Artificial

<220>
<223> EGFR oligonucleotide

<400> 194
agccgaggca gggaatgcgt g 21

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/063709 A2

(51) International Patent Classification⁷: G01N

(21) International Application Number: PCT/US2004/000368

(22) International Filing Date: 8 January 2004 (08.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/438,735 8 January 2003 (08.01.2003) US

(71) Applicant (*for all designated States except US*): **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; Route 206 and Province Line Road, Princeton, New Jersey 08543-4000 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **AMLER, Lukas, C.** [US/US]; 845 Granada Lane, Foster City, California 94404 (US). **JANUARIO, Thomas** [US/US]; 11 South Main Street, Lambertville, New Jersey 08530 (US).

(74) Agents: **GOLIAN, Paul, D.** et al.; Bristol-Myers Squibb Company, P.O. Box 4000, Princeton, New Jersey 08543-4000 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

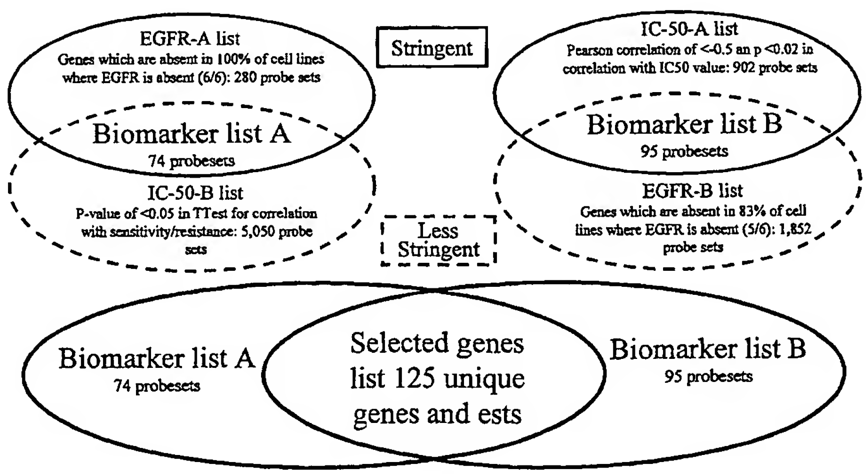
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,*

[Continued on next page]

(54) Title: BIOMARKERS AND METHODS FOR DETERMINING SENSITIVITY TO EPIDERMAL GROWTH FACTOR RECEPTOR MODULATORS



(57) Abstract: EGFR biomakers useful in a method for identifying a mammal that will respond therapeutically to a method of treating cancer comprising administering an EGFR modulator, wherein the method comprises (a) exposing the mammal to the EGFR modulator and (b) measuring in the mammal level of at least one biomaker, wherein a difference in the level in at least one biomaker measured in (b) compared to the level of the biomaker in a mammal that has not been exposed to the EGFR modulator indicates that the mammal will respond therapeutically to the method of treating cancer.

WO 2004/063709 A2

ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)*

Published:

— *without international search report and to be republished upon receipt of that report*

(48) Date of publication of this corrected version:
31 March 2005

(15) Information about Correction:
see PCT Gazette No. 13/2005 of 31 March 2005, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.